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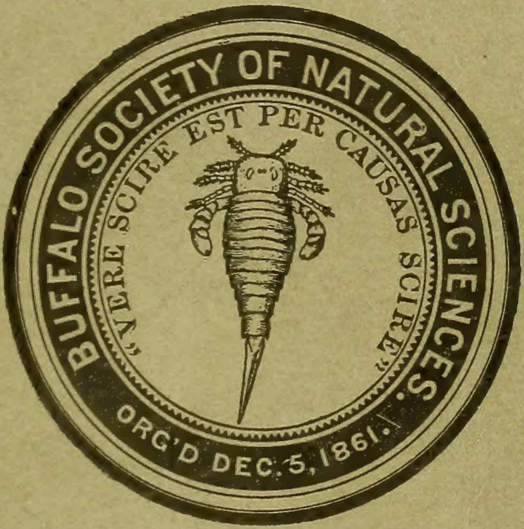
VOLUME X No. 1

BULLETIN

of the

BUFFALO SOCIETY OF NATURAL SCIENCES


"VERE SCIRE EST PER CAUSAS SCIRE."
ORG'D DEC. 5, 1861.

A DIRECTORY
of
AMERICAN MUSEUMS

Smithsonian Institution
MAR 18 1911
National Museum

BUFFALO, NEW YORK
1910

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VOLUME X No. 1

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Buffalo Society of Natural Sciences

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Buffalo Society of Natural Sciences

VOLUME X OCTOBER, 1910 No 1

A DIRECTORY OF AMERICAN MUSEUMS OF ART, HISTORY, AND SCIENCE

COMPILED BY

PAUL MARSHALL REA

Secretary of the American Association of Museums

INTRODUCTION

At the third annual meeting of the American Association of Museums, in 1908, the writer discussed the desirability of a directory of American museums and presented a tentative outline of data which might advantageously be included.[1] He was then authorized to undertake the compilation of such a directory on behalf of the Association, and the Buffalo Society of Natural Sciences generously offered to publish the work. To Mr. Henry R. Howland, Superintendent of the Buffalo Society, the writer desires to acknowledge indebtedness for many courtesies.

The purpose of the directory is to bring together in convenient form data regarding the organization and work of American museums, with the object of promoting mutual aid and coöperation. It is fully realized that statistics concerning collections can give only a very imperfect indication of the importance of museums, but when the character of the financial support and other details of organization are also given it is possible to form a much closer estimate of relative efficiency. It is also hoped that the publication of such information may stimulate the development of museums by showing what is already being done.

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[1] See *Proc. Am. Assoc. Mus.*, II, 1908, 33-35.

The scope of the directory was finally determined after receiving suggestions from the council of the Association and others, and a form for the return of information was prepared. The mailing of these forms was begun in February, 1909. Since that time information has been gathered as rapidly as the time and funds available would permit. All manuscript has been prepared since February 1, 1910, and the account of each museum has been submitted for revision, except in a few cases during the course of publication. It was originally planned to issue the directory in May, 1910, but delay in securing returns from many museums necessitated postponement, seven or eight communications being necessary in a number of cases.

An effort has been made to include the museums of both North and South America, but the time consumed in the mails to South America has made it impossible to obtain satisfactory results in this part of the work. Such information, however, as has been obtained is printed, with the names of other museums secured from various sources. As the work progressed it became evident that no line of demarcation could be drawn between active museums and collections hardly worthy of the name, and it was decided to include all except private museums not open to the public. No effort has been made to compile data regarding medical or other special museums, but accounts of some of these have been received and printed.

The mailing list was originally compiled from a number of publications covering a part of the field of the directory. This list has been extended by suggestions from the institutions to which manuscript has been sent. For this purpose a list of the museums in each state or province was included with nearly all manuscript submitted for approval, with a request that it be verified and extended if necessary. Among previous publications that of Merrill[1] is worthy of special mention. This contains accounts of scientific museums similar in many respects to those of the present work, the chief addition in the latter being administrative information intended to indicate the organization and importance of the museums described. In a number of cases where we have been unable to obtain satisfactory information the account is based upon Merrill, due credit being given in each instance. In other cases where a similarity of accounts may be noted it is apparently due to the use of the same catalogs or other printed matter as sources of information.

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[1] Natural History Museums of the United States and Canada. *Bull. N. Y. State Mus.*, 62, 1903.

In relation to historical museums much help has been derived from a report on state and local historical societies[1] compiled for the American Historical Association by a committee consisting of Reuben G. Thwaites, chairman, Benjamin F. Shambaugh, and Franklin L. Riley. References to Thwaites in the text refer to this work. Other sources of information include the "Handbook of Learned Societies" issued by the Carnegie Institution, the census reports, and "Minerva." The last has been consulted chiefly in regard to South American museums which have not otherwise been heard from. The census reports have been drawn upon for accounts of the smaller zoölogical parks, which it was decided to include only when the work was about to go to press.

In comparing our returns with those of Merrill and Thwaites it is of interest to note that a considerable number of museums, often with the same curator, now report much smaller collections, or even "no museum." This is probably not to be interpreted as an actual decrease of material, but rather as an indication of estimates made in absence of records, either in both cases or in the earlier only. When "no museum" is reported it often indicates an indefinite conception of what a museum is.

The final results fail in many respects to come up to the standard which it was hoped to maintain, and the work is submitted with a full realization of its incompleteness, but with the hope that it may prove of value in promoting the objects for which it was undertaken. It is intended that it may also serve as the basis of further studies in the organization and work of American museums which may be published in the *Proceedings* of the American Association of Museums. To this end, all museums are urgently requested to place the secretary of the Association on their mailing lists for all publications descriptive of their work. Communications should be addressed to Paul M. Rea, Secretary, American Association of Museums, Charleston, S. C.

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[1] Report of Committee on Methods of Organization and Work on the Part of State and Local Societies. *Ann. Rep. Am. Hist. Assoc.*, I, 1905, 249-325.

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UNITED STATES

ALABAMA

AUBURN:

ALABAMA POLYTECHNIC INSTITUTE.

The herbarium of the institute comprises 6000 cryptogams and 17,000 phanerogams, and is in charge of Francis E. Lloyd, professor of botany, assisted by Charles S. Ridgeway, instructor in botany.

There are also small teaching collections in geology and zoölogy, and a paleontological collection including a series of local fossils and a small collection from the Paris basin.

MONTGOMERY:

ALABAMA DEPARTMENT OF ARCHIVES AND HISTORY.

This department was established in 1901 and maintains a museum and art gallery in the state capitol, in charge of Thomas M. Owen, director.

TALLADEGA:

TALLADEGA COLLEGE. Museum.

The museum has been accumulated gradually since the founding of the college in 1867, and includes small collections in anthropology, art, botany, commerce and industry, geology, paleontology, zoölogy, etc., chiefly used in connection with instruction in the college. The museum has no regular income and no special staff, being cared for by the teachers of the scientific subjects.

TUSCALOOSA:

GEOLOGICAL SURVEY OF ALABAMA. Museum.

STAFF. Director, Eugene Allen Smith, who is also director of the survey; Curator, Herbert H. Smith; Volunteer Assistant, Mrs. Herbert H. Smith.

ANTHROPOLOGY. Two cases of Indian antiquities, chiefly from Moundville, near Tuscaloosa. This material has been presented by Dr. Smith, Professor Wyman, and Mr. E. N. C. Snow. There is no systematic collection at present.

BOTANY. A. The Mohr herbarium, comprising (1) 2500 species of ferns and flowering plants growing without cultivation in Alabama, and 2500 species of algae, lichens, fungi, mosses, and liverworts of Alabama. (2) A forestry collection, comprising (a) specimens of the native woods of Alabama in blocks of brick shape with appropriate labels, collected by Dr. Mohr in 1880 for the geological survey and representing 125 species; (b) 150 specimens in individual glass-front cases, illustrating the foliage, flowers, and fruit of the species included in (a); (c) manuscript maps by Dr. Mohr, illustrating the geographical distribution of the most important timber trees. This extensive herbarium of native plants was collected by Dr. Charles A. Mohr and Dr. Eugene A. Smith, and presented by them to the geological survey of Alabama in 1873. It was the basis of Dr. Mohr's report on "The Plant Life of Alabama." Since that time many additions have been made by Dr. Mohr, who also did all the work of mounting and arranging the specimens. B. The Peters collection, the gift of Judge Thomas Minott Peters, comprising (a) the T. M. Peters collection of 110 species of mosses, 23 of algae, 500+ of Alabama fungi, 110 of Alabama lichens, and 200 of the genus *Carex;* (b) fascicles I-V of Ravenel's *Fungi Caroliniani exsiccati,* 500 species; (c) fascicles I-V of Tuckerman's *Lichenes Amer. Septr.,* 150 species. These are all mounted in bound volumes, and constitute a most valuable part of the herbarium.

GEOGRAPHY. A large relief map of the southern Appalachian region, the work of E. E. Howell, and many maps and sections prepared by the state and United States surveys, together with models and relief maps for educational purposes.

GEOLOGY AND PALEONTOLOGY. The collections of the geological survey of the state are by law deposited in the museum, comprising 75,000± fossils and 5000± minerals and rocks illustrative of Alabama geology and mining industries. There is also a very large and fine series of tertiary fossils, presented by Mr. T. H. Aldrich and including the co-types of species described by him; the Lommel collection of 1000 specimens of European fossils and rocks; the Schowalter collection of minerals and fossils; extensive collections from New York, Vermont, Indiana, Wisconsin, etc.; and an extensive series from the United States geological survey. Among the fossils, the type series of Alabama coal plants, described by Lesquereux, deserve special mention.

ZOÖLOGY. (1) The conchological collections of about 2000 species, comprising (a) the classical Schowalter collection of 100,000 land, fresh-water, and marine shells from all parts of the world; (b) the Mohr collection of land, fresh-water, and marine shells from all parts of the world; (c) collections of Alabama species, including 350 species of land and fresh-water shells collected by H. H. Smith. (2) Entomological collections, including several thousand specimens as yet unnamed, and 1000 named species of Alabama coleoptera, presented by Mr. H. P. Löding, of Mobile. (3) The Mohr alcoholic collection of fishes of Mobile Bay. (4) Alcoholic specimens of marine invertebrates of the Atlantic coast, presented by the Smithsonian Institution. (5) The Tuomey collection of Alabama reptiles. (6) The Avery bird collection, made by the late Dr. Avery at Greensboro, and purchased by the geological survey and deposited in the museum. The collection consists of 900 specimens of bird skins, representing 175± species.

Historical Sketch. The present museum has grown from the collections made by the geological survey, under Professor Tuomey from 1847 to 1857, and under Dr. Eugene A. Smith from 1873 to the present. The collections of Professor Tuomey and of the university were largely destroyed by fire in 1865. The specimens which were saved at that time lost most of their value by the destruction of their labels during the period of reconstruction from 1868 to 1871. Since 1871 the geological department of the university, and since 1873 the geological survey of the state, have been under the charge of Dr. Eugene A. Smith. The present museum has been chiefly accumulated during this period. The state legislature of 1906–7 appropriated $100,000 for the erection of a new building to provide adequate quarters for the museum.

Financial Support. The museum has no special funds. The expense of collection and administration has been met by the geological survey, while the cost of cases and other equipment has been borne by the university.

Building. The new building, named Smith Hall in honor of the director, was completed in December, 1909, at a cost of $100,000 appropriated by the legislature. It provides about 12,000 square feet of floor space available for exhibition, and 18,000 for library, offices, workrooms, lecture rooms, and laboratories for the geological survey and for the departments of biology and geology of the university.

Administration. By a director, who is also professor of geology and state geologist, responsible to the president and board of trustees of the university.

Scope. Special emphasis is laid upon exploration and exhibition of the biological and geological resources of Alabama, supplemented by general collections for university instruction.

Library. 3000–4000 books and many thousand pamphlets relating chiefly to geology and natural history, intended primarily for the use of the staff and university students. Most of this material is the gift of Dr. Smith.

Publications. The museum issues no publications at present, but many of its collections have been described in the reports of the survey.

Attendance. Open free to the public on week-days. No statistics of attendance are available.

ALASKA

SITKA:

ALASKA DISTRICT HISTORICAL LIBRARY AND MUSEUM. This institution was established by Congress in 1900 and maintains a museum of Alaskan objects as well as a library, in charge of Governor Walter E. Clark, official custodian.

ARIZONA

TUCSON:

UNIVERSITY OF ARIZONA. Museum.

Staff. Curator, Herbert Brown.

Anthropology. Specimens of ancient and modern aboriginal pottery from the pueblos and cliff houses of Arizona; stone implements; relics of the Spanish conquest; skulls and clay images; figures illustrating the dress of the Yuma Indians and Mexicans.

Botany. 10,000± specimens, including the botanical survey herbarium of 2500 specimens of the Arizona flora. The cactaceae are especially well represented in the herbarium, there being more than 1000 mounted specimens and as many more unmounted duplicates.

Geology. Minerals, 2500; Rocks, 3000. There is, in addition, an economic collection including copper ores and minerals from Bisbee; gold, silver, and lead ores of the state; gypsum, cement, and building stones; and also the 86-pound Weaver meteorite.

Paleontology. Collections of Arizona fossils.

Zoölogy. 1500 specimens, chiefly from Arizona, and the Herbert Brown collection of 1200 skins of Arizona birds loaned by the curator.

Financial Support. By irregular appropriations from the general funds of the university. The curator receives, in addition to his professorship in the university, a small amount appropriated directly by the state.

ARKANSAS

CONWAY:

HENDRIX COLLEGE.

The college has small teaching collections in charge of G. H. Burr. They comprise about 800 minerals, chiefly economic; about 75 specimens in historical geology; and 100 zoölogical specimens.

FAYETTEVILLE:

UNIVERSITY OF ARKANSAS. Museum.

STAFF. The museum is in charge of A. H. Purdue, state geologist and head professor of geology and mining in the university.

BOTANY. 1500± species, 3500 specimens.

GEOLOGY. Minerals, 3500; Rocks, 300; Relief maps, 13; Mine models, 8.

PALEONTOLOGY. Invertebrates, 1000; Vertebrates, 300; Plants, 500.

ZOÖLOGY. Insects, 200 species; Fishes, 350 species, 1500 specimens; Batrachians and reptiles, 40 species, 200 specimens, 18 skeletons; Birds and mammals, 80 species, 200 specimens.

HISTORICAL SKETCH. The botanical and zoölogical collections, and a part of the paleontological collection, were organized previous to 1896. The others have been added to the museum since that date.

FINANCIAL SUPPORT. By appropriations from the state legislature, averaging about $500 a year.

BUILDING. The museum occupies 6130 square feet of floor space available for exhibition, and 2367 for offices, classroom, laboratory, etc., on the fourth floor of the main building of the university, erected in 1871 at a cost of $170,000 defrayed by the state.

ADMINISTRATION. By a curator, who makes a biennial report to the trustees of the university.

SCOPE. Primarily teaching and research work.

ATTENDANCE. Open free to the public on week-days throughout the collegiate year and upon application during vacation.

CALIFORNIA

AVALON, SANTA CATALINA ISLAND:

TUNA CLUB.

The club has a museum of mounted game fishes of Southern California and Texas, in charge of A. L. Beebe, honorary curator. There is also a library of angling.

ZOÖLOGICAL STATION.

This station maintains a collection of living fishes and invertebrates of the locality; a set of alcoholic specimens of rare fishes, etc., many of which have been described and figured. The station also has a collection representing the archeology of the Channel Islands of California, part of which is on exhibition in the chamber of commerce at Los Angeles.

BERKELEY:

UNIVERSITY OF CALIFORNIA. Department of Botany.

This department maintains a herbarium comprising 133,055 mounted sheets of plants. This includes an economic collection of 3182 sheets, 10,137 sheets of algae, 3267 sheets of fungi, 9285 other cryptogams, and 107,184 sheets of phanerogams. There is also a large collection of unmounted material, the greater part of which is available for study, making a total available collection of about 250,000 sheets. Although the general aim of the department is to devote special attention to western North America, a large number of eastern and European species is represented, while the collection of New Zealand and Australian plants is considerable. The nucleus of the herbarium is a nearly complete set of the state survey collections, to which have been added nearly all of the sets distributed from western North America and especially from the Brandegee herbarium, which is rich in types and duplicate types and contains a good representation of the Mexican flora.

The herbarium is in charge of W. A. Setchell, professor of botany, who has assigned its keeping to H. M. Hall, assistant professor of botany; it also profits by the labors of Mr. and Mrs. T. S. Brandegee, who serve without pay, the former having the title of honorary curator of the herbarium. C. A. Purpus is the botanical collector.

The herbarium is temporarily housed on the top floor of the Hearst Memorial Mining Building, a thoroughly fireproof structure, where it is accessible to graduate students and to visiting botanists. It is supported by state funds administered through the officers of the university, about $2000 a year being expended on supplies and labor.

Connected with the herbarium is a botanical museum comprising several thousand specimens reserved for research purposes, and also a botanical garden of two and a half acres, in which about 2500 species of plants are cultivated, and upon which the sum of $1200 per year is expended.

UNIVERSITY OF CALIFORNIA. Department of Geology and Mineralogy.

The department maintains a teaching collection of rocks and minerals contained in about 1200 drawers and in about 125 linear feet of glass cases. There are also glass and wooden models, specimens from mines on the Pacific coast, models of interesting geologic regions, and 3600 slides for microscopic study. These collections are in charge of Andrew C. Lawson, professor of geology and mineralogy.

UNIVERSITY OF CALIFORNIA. Museum of Paleontology.

The paleontological collections are in charge of Professor J. C. Merriam and the staff of the department of paleontology. The museum includes the collections of the geological survey of California, and is rich in types and representative specimens of California fossils, in addition to a large series illustrating the invertebrate paleontology of North America, and a carefully selected series of crinoids from Crawfordsville, Indiana. The number of invertebrate fossils is estimated at 150,000, with several hundred type specimens; of vertebrate fossils at 15,000, with about 100 types; of plant fossils at 3000, with about 50 types.

UNIVERSITY OF CALIFORNIA. Museum of Vertebrate Zoölogy.

STAFF. Director, Joseph Grinnell; Curators, Edmund Heller (mammals), Harry S. Swarth (birds); Assistant curator of mammals, Walter P. Taylor; Preparators, John Rowley (work done by contract) and E. J. Fischer (osteology); 1 janitor, 1 stenographer, and 1 helper.

ZOÖLOGY. Fishes, very few; Batrachians, 500±; Reptiles, 1000±; Birds, 22,000±, including 40 types and the private collections of Messrs. Grinnell, Swarth, and Morcom, amounting to some 14,000 specimens; Mammals, 9000±, including 10 types; Bird eggs and nests, 500. Most of this material is in study collections, the space for exhibition being limited. A number of large groups is planned for the near future.

HISTORICAL SKETCH. The museum was inaugurated in 1908 as a department of the university, under the patronage of Miss Annie M. Alexander of Oakland, California.

FINANCIAL SUPPORT. A fixed sum of $6000 per year, promised by Miss Alexander for a term of years. In addition, Miss Alexander has expended several thousand dollars on exhibition, on securing the material for groups, and for the mounting of groups, which latter is provided entirely outside of the regular allowance.

BUILDING. Erected in 1909 at a cost of $15,000, of which $8000 was appropriated by the university, and $7000 donated by Miss Alexander. It provides 3500 square feet of floor space for exhibition, and approximately 5000 for offices, workrooms, etc. This building is considered a temporary structure.

Administration. By a director, responsible to the president of the university and to Miss Alexander.

Scope. The purposes of the museum are exploration, research, and college teaching.

Publications. Papers from the museum are published in the University of California Publications in Zoölogy.

CLAREMONT:

POMONA COLLEGE. Museum.

The museum was founded by A. J. Cook, and is connected with the department of biology. It consists chiefly of teaching collections, in charge of C. F. Baker, curator and professor of zoölogy. It occupies a portion of the second floor of the Pearsons Hall of Science, erected in 1898. The collections comprise a herbarium of 200,000± phanerogams and 10,000± cryptogams, including co-types, para-types, or topo-types of nearly all the numerous new species collected by the curator in the United States, Nicaragua, Colombia, Cuba, and Brazil; synoptic collections in geology and paleontology to illustrate the lectures given in courses on these subjects; and extensive collections in zoölogy, including 5000± shells, 250,000 insects (numerous types), 10,000± other invertebrates, and 5000 vertebrates. There is a department library of over 5000 titles in direct connection with the museum. The collections are maintained from the funds of the department, amounting to $2000 or more per annum, and are used chiefly for teaching purposes. They are augmented by the results of exploration and research by members of the department. Publications based upon museum material are a portion of the "Invertebrata Pacifica" and the "Pomona Journal of Entomology Quarterly," 5 numbers having been published.

LOS ANGELES:

BOARD OF EDUCATION. Science and Art Museum. (High School.)

Staff. J. Z. Gilbert in charge.

Anthropology. 100 Indian specimens.

Art. 50 drawings and 100 working charts of drawings.

Geology. Minerals, on exhibition, 200, in storage, 500; Rocks, 200; non-mettalic ores, 100.

PALEONTOLOGY. Invertebrates, on exhibition, 400, in storage, 100; Vertebrates, on exhibition, 100, in storage, 1000, types and figured specimens, 2; Plants, on exhibition, 20, in storage, 10.

ZOÖLOGY. Shells, 600; Insects, 50; Other invertebrates, 250; Fishes, 50; Batrachians, 25; Reptiles, 50; Birds, 400; Mammals, 20; Microscopic material, 400± specimens.

HISTORICAL SKETCH. The museum was begun in 1907 by Mr. Gilbert, and is designed to aid the schools of the city in illustrating class work.

FINANCIAL SUPPORT. By a direct city appropriation of $200 annually, in addition to $200 in fixtures, and by private contributions.

BUILDING. The museum occupies about 1400 square feet of floor space in the science hall of the Los Angeles High School. A two-story building 50 × 100 feet in Agricultural Park has recently been secured for the exhibition of part of the museum material.

SCOPE. Public school teaching, supplemented by local exploration.

ATTENDANCE. Open free to the public.

CHAMBER OF COMMERCE.

A part of the collection of the Zoölogical Station of Avalon, Santa Catalina Island, representing the archeology of the Channel Islands of California is on exhibition here.

SOUTHERN CALIFORNIA ACADEMY OF SCIENCES.

The academy has a collection of local pleistocene fossils and other material with which it proposes to establish a museum in the Art Building in Agricultural Park, where a floor space of 15,000 square feet has been set apart for this purpose.

THE SOUTHWEST MUSEUM.

STAFF. Founder emeritus, Chas. F. Lummis; Curator, Hector Alliot.

COLLECTIONS. The most perfect collection extant of Southern California archeology; important archeological collections from Arizona, New Mexico, Mexico, Peru, and Bolivia; all relics of the Franciscan missionaries and the missions in Southern California, including the mission records of Los Angeles; personal relics of John C. Fremont and Jessie Benton Fremont, including the flag which he raised on the crest of the Rocky Mountains in 1842; the Lummis collections of about 5000 items from New Mexico, Mexico, Arizona, Bolivia, and Peru.

There is also the most important collection ever made of old Spanish and Indian folk-songs of the Southwest, including phonographic records of over 200 Indian songs in 36 different languages.

Historical Sketch. The Southwest Museum was founded by the Southwest Society of the Archæological Institute of America and was incorporated December 31, 1907.

Financial Support. Chiefly from the Southwest Society, which has an income of about $2500 a year. Endowments in money and collections are now worth about $300,000. The Carrie M. Jones bequest of $50,000 is available for a new building, for which a sixteen-acre site has been purchased for $38,000.

Building. The collections now occupy about 4000 square feet of floor space above the public library in the Hamburger building.

Scope. In addition to a general museum special attention is given to the archeology, ethnology, history, science, and art of California, the Southwest, and Spanish America.

Library. The Lummis library of 5000 items of Spanish America, including the rarest books and manuscripts; and the Munk library of Arizoniana, comprising about 6000 items.

Publications. A series of leaflet bulletins relating to the work of the museum is issued by the Southwest Society.

Attendance. Open free to the public on week-days from 2 to 4. The average monthly attendance is about 1000.

UNIVERSITY OF SOUTHERN CALIFORNIA.

No information has been received concerning the collections of this university, which are said by Merrill to include nearly 3000 fossils, 3700 minerals, 1000 specimens of historic and economic geology, 5000 plants, 730 ethnological specimens, and 22,300 zoölogical specimens, including 525 birds and 125 bird eggs, 350 other vertebrates, a small collection of insects, and 19,500 mollusca.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 2 acres, established in 1896, containing 4 reptiles, 194 birds, and 38 mammals.

OAKLAND:

OAKLAND PUBLIC MUSEUM.

Staff. Curator, C. P. Wilcomb; Cataloger, Mrs. Alice G. Whitbeck; 1 stenographer, 1 mechanic, and 2 janitors.

Anthropology. 2000 specimens. This is the most active department of the museum at present, and special attention is given to collections representing the Indian tribes of the Pacific coast. There is also a collection of well selected material from Africa, India, China, Thibet, South Pacific Islands, and the Philippines.

GEOLOGY AND PALEONTOLOGY. 500 selected minerals and a small collection of fossils.

HISTORY. 1000 articles illustrating the husbandry, manufactures, arts, social customs, and home life of the early colonies and pioneer settlers. This collection is large and comprehensive. Four large rooms in the new annex have been specially prepared to accommodate it, as follows: old-time kitchen and living room, with huge fireplace; bedroom with complete equipment; weaving room; and large room for antiquities in general. These rooms are all low-posted, with heavy beam effect and small old-fashioned windows. All designed after colonial interiors in the East.

NUMISMATICS. A collection of coins and currency representing almost every country on the globe.

ZOÖLOGY. A small collection of carefully selected butterflies, moths, and insects; a collection of shells, corals, and other marine objects; and a bird collection, comprising 400 mounted specimens, 200 skins, and 3000 eggs.

HISTORICAL SKETCH. The nucleus of the museum is the Bryant ornithological collection, which was purchased by private subscription and presented to the city in 1907. Subsequently the Rabe, Daggett, and Wilcomb collections were purchased, and in 1909 the museum was formally placed under the direction of the board of trustees of the Oakland Free Library. The collections were installed in the Josiah Stanford mansion, on the western shore of Lake Merritt, and C. P. Wilcomb was elected curator.

FINANCIAL SUPPORT. The museum receives its entire support from the city of Oakland, which has appropriated $10,000 for maintenance during the current fiscal year, with a special appropriation of about $5000 for improvements and additions to the building. Oakland has a population of 200,000, an assessed tax value of $105,000,000, and a tax rate of $1.20.

BUILDING. Formerly a large residence belonging to the Stanford estate on the western shore of Lake Merritt. The land was recently purchased by the city for park purposes and the building has been thoroughly renovated and an addition of seven rooms erected. The building affords about 4700 square feet of floor space available for exhibition purposes, and 1000 for offices, workrooms, and storerooms.

ADMINISTRATION. By a curator, responsible to the board of trustees of the Oakland Free Library.

SCOPE. The primary object of the museum is the instruction of the general public.

ATTENDANCE. Open free to the public daily.

PIEDMONT ART GALLERY.

This is a private gallery owned by Mr. Frank C. Havens, and consists of about 350 pictures, principally modern, representing various European and American schools. It consists of three buildings, each 120 feet long, divided into nine rooms of various sizes. The gallery is in charge of Richard L. Partington, curator, and is open to the public from 10 to 4 at a nominal fee of 10 cents. Its object is exclusively educational.

PACIFIC GROVE:

PACIFIC GROVE MUSEUM ASSOCIATION.

STAFF. Curator, Laura Duncan; Botanist, M. E. B. Norton; Librarian, Jeanette Murray.

BOTANY. A herbarium of 924 cryptogams, including 500 North American and foreign ferns, and 424 algae of Monterey Bay; 2478 phanerogams, of which 478 local and Californian specimens are exhibited, while 500 local, and 1500 eastern, foreign, and Philippine forms are in storage. A small forestry collection includes 50 cones and a large number of seeds.

GEOLOGY AND PALEONTOLOGY. About 200 minerals, and 20 invertebrate fossils.

ZOÖLOGY. Shells, on exhibition, 235 local species and 385 Philippine specimens, in storage, 3000±; Insects, 200±; Other invertebrates, 100 (local); Fishes, 54 mounted and 26 in alcohol; Reptiles, 15 mounted and 20 in alcohol; Birds, 62 mounted and 447 skins; Mammals, 45; Bird eggs, 600.

HISTORICAL SKETCH. The museum was established in 1883 by the Chautauqua Assembly in connection with class work in zoölogy. The Pacific Grove Museum Association was organized in 1899, and incorporated in 1900 with 35 charter members. At this time a collection of 1100 specimens was purchased, partly representing the life of Monterey Bay; later were purchased a collection of East Indian birds and one of local bird eggs. All other collections have been added by donation.

FINANCIAL SUPPORT. The museum had the following sources of income in 1909: from memberships, $436; from donations, $31; from proceeds of entertainments and festivals, $196.

Building. The museum occupies a building presented to the association, and adapted for its use in 1901 at a cost of $500. About 836 square feet of floor space is available for exhibition, and 447 for offices, workrooms, etc.

Administration. By the president and board of directors of the association.

Scope. The objects of the association are to maintain a museum for the preservation of local fauna and flora; to develop a garden of native flora; to conduct classes and lectures; to provide a scientific library; to hold periodical exhibitions; and to encourage the study and preservation of the fauna and flora of Monterey County.

Library. 330 volumes and 1200 pamphlets, on subjects pertaining to natural history, are available for the use of members of the association and students.

Publications. A souvenir of the tenth anniversary (1910).

Attendance. Open free to the public daily (except Mondays and holidays) from 2 to 5. The attendance for 1909 was 1224 adults and 484 children.

PALO ALTO:

LELAND STANFORD JUNIOR MUSEUM.

Staff. Curator, H. C. Peterson; Assistant curators, E. G. McCann and A. H. S. Chuck (Chinese and Japanese department), W. W. Adams (art), A. F. Meston (Egyptology); Assistants, C. Williams, O. Utzinger, B. Kawakama.

Anthropology. Uncivilized peoples: Archeology, native, 350, foreign, 8126; Ethnology, native, 2985, foreign, 3110. Civilized peoples, ancient, 3630, modern, 3250. Among special collections may be mentioned the following: Danish stone and bronze, 1250; Ohio and Middle states, 1000; Klamath Indians (Dagget collection); Indian baskets; early Spanish and Mission. At present the curator is devoting special attention to local mound material.

Art. Sculpture, 169; Prints and engravings, 1260; Oil paintings, 685; Water colors, 325; Ceramics, 1650; Textiles, 1635. The Anna Lathrop Hewes collection of paintings, statuary, mozaic, etc., and a collection of pictures in oil presented by the Hon. Thomas Welton Stanford, of Australia, are noteworthy. The collection of ceramics is rich in Sevres, Bohemian, Venetian, French, Oriental, Dresden, Royal Berlin, Persian, Pompadour crystal, and many other wares. The textiles are rich in laces, Japanese embroideries, Turkish, Roumanian, and Chinese collections, and fine chronological series of mummy cloth. Included with the prints and engravings are many exceedingly rare books and maps.

The famous Ikeda collection of Chinese and Japanese ceramics, kakimonos, bronzes, ivories, jades, lacquers, etc., was purchased in 1902 at a cost of $100,000. Another collection of great value is the Di Cesnola collection of 5000 pieces of Greek and Roman pottery and glass from the island of Cyprus. Next to that of the Metropolitan Museum of New York this is the largest collection in the world.

COMMERCE AND INDUSTRY. No regular department is maintained but the museum has the first locomotive used on the Southern Pacific Railroad called the "Governor Stanford," also a few model sailing vessels, cars, etc., valued chiefly for historical associations.

GEOLOGY. Minerals, 1500; Rocks, 100; Relief maps, models, etc., 2. This collection is rich in minerals of the Ural Mountains and in local quartz, cinnabar, iron, etc., but is being transferred to the mining department of the university.

HISTORY. Rich in Central Pacific Railroad and U. S. Grant material, the latter being second in value to that of the Smithsonian Institution.

ZOÖLOGY. Shells, 2500; Birds, 600; Mammals, 15. This department, as well as that of geology, is discontinued for the present, the material being transferred to the university.

Extensive collections of Stanford historical material, showing the history of the Stanford and Lathrop families and the growth of Stanford University as shown by photographs, plans, paintings, prints, publications, etc., since 1884. Also photographs, etc., showing the Stanford stock farm when it was the largest thoroughbred stock farm in the world.

HISTORICAL SKETCH. The nucleus of the museum is a collection made by Leland Stanford, Jr., in 1880 during a trip through Great Britain and central and southern Europe. Upon his return to California in 1882 he began to arrange and catalog the material accumulated. This collection is now exhibited in one of the rooms of the museum. In 1883 he accompanied his parents on a second visit to Europe and pursued his archeological researches and acquisitions with more fervor than ever. The material collected at this time is now exhibited in an adjoining room and shows how his tastes had matured. It was the intention of Leland Stanford, Jr., to add continually to this museum, and especially to begin a collection of Chinese and Japanese curios and one of American mound builders. His intentions are now being carried out by the museum.

Financial Support. By appropriations from the board of trustees of the university. There is, however, no regular appropriation and no fund of any kind for the acquirement of new material. About $2500 is derived annually from admission fees.

Building. Erected in 1891–1906 by Mrs. J. L. Stanford at a cost of $1,200,000. It provides 200,000 square feet of floor space available for exhibition, and 90,000 available for offices, workrooms, etc.

Administration. By a curator, responsible first to the chairman of the museum committee, second, to the president of the board of trustees, third, to the board of trustees. The museum is not under the departments of instruction of the university.

Scope. Maintained primarily for the instruction of the general public.

Library. The museum has access to the university library but has practically no library of its own. Nearly all of the books used at the museum are the personal property of the curator.

Publications. A number of small handbooks describing the collections has been issued in the past. The annual report to the trustees is not printed for distribution.

Attendance. Admission fee, 25 cents to all except members of the faculty of Stanford University. University students are admitted free on Saturdays. Up to 1906 the average paid admissions were 12,000 a year, with an additional free list of 20,000.

LELAND STANFORD JUNIOR UNIVERSITY.

The university maintains teaching collections in connection with the departments of instruction as follows:

Botany. Herbaria, consisting largely of plants collected in western America and including considerable donations from the National Herbarium, the California Academy of Sciences, J. W. Congdon of Mariposa, and others. The private collections of flowering plants and fungi belonging to the head of the department are also available.

Geology and Paleontology. In addition to its general teaching collections, this department is to receive the geological collections of the Leland Stanford Junior Museum.

Zoölogy. A very full representation of the fishes of North America; a valuable series of deep-water fishes of the Pacific; large collections of fishes from the West Indies, Hawaiian Islands, Bering Sea, Japan, the coasts of Mexico and Central America, and the

Galapagos Islands; a large representation of the reptiles, batrachians, birds, and mammals, of California and adjoining states; and collections of marine invertebrates, rich in Pacific echinoderms and crustacea. There are also entomological collections containing authoritatively determined specimens in all of the insect orders; many sets of specimens illustrating development and habits of insects; the most important existing collection of North American Mallophaga, comprising the types of four-fifths of all species so far described from North America and the Pacific Islands; an unusually large collection of Coccidae; and a valuable series of specimens from the Galapagos Islands.

PASADENA:

THROOP POLYTECHNIC INSTITUTE.

The institute has an excellent collection of minerals and collections of insects, birds, and mammals, in addition to alcoholic material. The only officer of the museum yet appointed is Charles F. Holder, honorary curator. The institute is about to move into a new building in which increased facilities will be provided for the museum.

SACRAMENTO:

CALIFORNIA MUSEUM ASSOCIATION.

STAFF. Curator, W. F. Jackson; 2 minor employees.

ART. E. B. Crocker Art Gallery. Sculpture, 7; Paintings, 701, including 119 miniatures.

HISTORY. A miscellaneous collection of 2000± uncataloged curios, relics, etc.

MINERALS. 2879 specimens, collected for the most part by Dr. H. W. Harkness, and purchased by the state.

HISTORICAL SKETCH. The Crocker Art Gallery was erected in 1870–73, at a cost of $235,000, by Judge E. B. and Mrs. Margaret E. Crocker and filled with their private art collections accumulated during travels in Europe, especially during the Franco-Prussian war. In 1884 the California Museum Association was formed to gather a museum of art and science and to study matters relating to the resources of California. To aid in securing a hall for its purposes, it gave an art loan exhibition in the Art Gallery by the kindness of Mrs. Margaret E. Crocker, widow of Judge Crocker. During the exhibition Mrs. Crocker donated to the association the building and its contents, but later changed the gift so that the title is held by the city of Sacramento, with the California Museum Association as co-tenant and administrator. The mineral collection is the property of the State of California.

Financial Support. Annual appropriations by the city, that for 1910 being $3000, exclusive of repairs.

Administration. By a curator, responsible to a joint board consisting of the mayor of the city and the directors of the California Museum Association.

Publications. Catalogs of paintings and of minerals in the collections.

Attendance. Open free to public every day in the week. Number of visitors in 1909, 13,387.

SAN FRANCISCO:

CALIFORNIA ACADEMY OF SCIENCES. Museum.

Staff. Director, Leverett Mills Loomis; Curators, Edwin Cooper Van Dyke (entomology), Leverett Mills Loomis (ornithology), John Van Denburgh (herpetology), Frank M. Anderson (invertebrate paleontology), John Rowley (mammalogy), A. L. Kroeber (anthropology), Alice Eastwood (botany); Assistant curators, Edward Winslow Gifford (ornithology), Joseph C. Thompson (herpetology), Washington H. Ochsner (invertebrate paleontology); Assistants Charles Fuchs (entomology), Rollo H. Beck (ornithology), Joseph R. Slevin and John I. Carlson (herpetology).

Collections. With the exception of a few type specimens, the collections of the academy, including the library, were destroyed in the conflagration of April, 1906. Fortunately, at the time of the fire, the academy had an expedition at the Galapagos Islands, in its schooner "Academy." This expedition returned to San Francisco on November 29, 1906, after an absence of seventeen months, bringing large collections of plants, fossil and recent shells, insects, reptiles, birds, and mammals, which formed the nucleus of a new museum. These collections have been extensively added to by the academy's collectors on the Pacific coast and in the Orient.

The research collections of the academy now contain over 70,000 fossil and recent shells; large series of insects from the Galapagos Islands, the Aleutian Islands, and the Orient; over 12,000 reptiles, chiefly from the Galapagos Islands, China, Japan, Formosa, and the Philippine Islands; 17,000 birds, over half of which are water birds, including more than 1800 specimens of albatrosses and petrels.

For an exhibition collection, elaborate habitat groups of the larger mammals of the Pacific coast are being prepared by Mr. John Rowley.

Building. The academy has built a ten-story class "A" income building on the site of the old museum building on Market Street, and plans have been drawn for a museum building, which it is proposed to erect in Golden Gate Park. Work on the new museum building will be delayed until the beginning of next year, pending an amendment to the charter of San Francisco.

Library. 14,000 volumes on natural history.

Publications. (1) Memoirs. (2) Proceedings. (3) Occasional Papers. The reports of the Galapagos Expedition and a history of the academy will be the chief publications issued during the next few years.

CALIFORNIA STATE MINING BUREAU. Museum.

The museum contains over 20,000 minerals and rocks obtained solely by donation and exchange. The collection of ores from California mines is very extensive and is supplemented by characteristic ores from the principal mining districts of the world. There are also many models, maps, photographs, and diagrams illustrating the modern practice of mining, milling and concentrating, and the technology of the mineral industries. An educational series of minerals for high schools has been recently inaugurated. The museum occupies about 7500 square feet of floor space for exhibition and is in charge of Percy K. Swan, curator. It is open free to the public on week-days from 9 to 5, except Saturdays, when it closes at 12. The number of visitors is over 120,000 annually.

MEMORIAL MUSEUM. (Golden Gate Park.)

This museum was first opened to the public on March 23, 1895. The exhibits represent a value of at least $1,000,000 and include paintings, tapestries, antique furniture, arms and armor, art metals, the Bardwell collection of 700 Japanese wood and ivory carvings, and extensive collections in ethnology, mineralogy, forestry and produce, agriculture, and natural history. The museum maintains a reference library, and has in preparation a museum guide and catalog. The collections are in charge of Albert E. Gray, curator. Recent and detailed information has not been available since the fire of 1906.

The museum has an annual attendance of over 500,000 visitors.

SAN FRANCISCO INSTITUTE OF ART.

Staff. Director, Robert Howe Fletcher; Assistant secretary, John Ross Martin; 2 janitors.

Art. Sculpture, 8; Prints and engravings, 94; Oil paintings, 50; Water colors, 3. These are the only portions of the Mark Hopkins

Institute of Art which escaped the earthquake and fire of 1906. The valuable Emanuel Walter collection has recently been received by bequest.

HISTORICAL SKETCH. The property situated on California and Mason streets, formerly the residence of Mark Hopkins, was deeded to the board of regents of the University of California in 1893, by Mr. Edward F. Searles, for the purposes of "illustration of and instruction in the Fine Arts," under the title of the Mark Hopkins Institute of Art, with the agreement that the San Francisco Art Association be affiliated with the university and placed in charge of the premises and management of the institute. For thirteen years this organization carried on the work of the institute, including frequent exhibitions and lectures, the maintenance of a library and reading room, and the publication of an illustrated magazine. The San Francisco Art Association had been founded in 1872, for the purpose of fostering a taste for art in the community, and had already conducted exhibitions and maintained a school in its own rooms for twenty years. The earthquake and fire of 1906 destroyed the institute, with the exception of the collections noted above. After the earthquake Mr. Searles transferred to the San Francisco Art Association what remained of the property of the Mark Hopkins Art Institute, including the insurance on the buildings, to be used for the maintenance of a new art institute known as the San Francisco Institute of Art. The association retains its affiliation with the University of California.

FINANCIAL SUPPORT. The San Francisco Art Association, which conducts the Art Institute, derives its income from memberships, school tuition fees, and admission fees. Although affiliated with the University of California the association receives no financial aid from the university or the state, with the exception that it pays no taxes.

BUILDING. A temporary building was erected in 1907 at a cost of $35,000 derived from the funds of the association. It provides 4500 square feet of floor space available for exhibition, and 9500 available for offices, workrooms, and for the School of Design.

ADMINISTRATION. By a director, responsible to a board of directors.

SCOPE. The museum illustrates the fine arts, principally by examples of paintings and drawings in all mediums, and by sculpture. The paintings and drawings are by artists of repute of all nationalities, principally of the last century.

LIBRARY. The former library was totally destroyed. At present there are 392 volumes relating to art. The library is intended for the use of both staff and public.

Publication. Art bulletins are issued at irregular intervals.

Attendance. Three days each week are free to the public. On other days an admission fee of 25 cents is charged, except to members. All records of attendance were destroyed in 1906.

UNIVERSITY OF CALIFORNIA. Anthropological Museum.

Staff. Director, F. W. Putnam; Curator and secretary, A. L. Kroeber; Museum assistant, Nels C. Nelson; Assistant secretary, Ethel G. Field; Preparators, A. Warburton and A. Poyser.

Anthropology. Archeology and ethnology, of California, 14,717; of North America, 11,244; of South America, 10,715; of Eastern Hemisphere and Pacific, 2182. Ancient and modern civilized peoples, 5360; Physical anthropology, 2171; Phonograph records, 1523. These figures are catalog entries, many of which represent several specimens. There is in addition a large Egyptian collection.

Art. A number of modern paintings; a series of ancient Greek and Roman pieces of statuary; also plaster casts of same; vases, etc. All objects having anthropological as well as artistic relations are included in the statistics given under anthropology. The ancient marbles number 100; Greek vases, 180; modern paintings, 105.

Historical Sketch. The museum had its origin in archeological expeditions on behalf of the University of California, instituted and supported by Mrs. Phoebe A. Hearst since 1899. The museum was organized in 1901 and moved to the present building in 1903.

Building. Erected for college use in 1898 at a cost of about $60,000, defrayed by the State of California. It is temporarily occupied by the museum and affords 11,000 square feet of floor space for exhibition, and 4000 for offices, workrooms, etc.

Administration. By the staff of the department of anthropology, responsible to the regents of the university.

Scope. Equal stress is laid on exploration, research, college teaching, and publication. A special synoptic anthropological collection for purposes of instruction, and a collection of casts illustrative of Greek and Roman art and architecture, both forming part of the organization of the museum, are displayed in a separate building on the university grounds at Berkeley.

Publications. (1) Egyptian archeology, 2 volumes issued, 5 in preparation; (2) Graeco-Roman archeology, 2 volumes issued, 1 in preparation; (3) American archeology and ethnology, 7 volumes issued, 3 in preparation.

Attendance. Open one afternoon a week to the public in parties limited to 20 at one time and under supervision; to members of the university and to scholars daily except Sundays and holidays.

SANTA CLARA:

ZOÖLOGICAL PARK.

The city and county jointly maintain a zoölogical park of 60 acres, established in 1891, containing 7 reptiles, 242 birds, and 134 mammals.

SANTA CLARA COLLEGE.

The college possesses teaching collections which include a paleontological museum, housed in the Literary Congress building, and a mineralogical cabinet. The paleontological museum consists of the Ward collection of casts, representing 529 species, and as many more original invertebrate and plant fossils. The collection of minerals includes 5 sets of crystal models, and about 4000 specimens of rocks, metals, ores, gums and resins, and the haloid minerals. There is also a complete set of corals, 2 relief maps, and a collection of charts, diagrams, etc.

COLORADO

BOULDER:

UNIVERSITY OF COLORADO. Museum.

STAFF. Curator, Junius Henderson; Student assistants.

ANTHROPOLOGY. Ethnology, 500±.

BOTANY. Cryptogams, 3000± sheets; Phanerogams, 10,000± sheets; Wood specimens, 50; Economic products, 50 jars; Fruits, 25; Seeds, 75 bottles; Riker mounts, 50; Unmounted specimens for exchange, 3000.

GEOLOGY. Minerals, on exhibition, 12,350, in storage, 2 tons; Rocks, 15,000; Relief maps, models, etc., 100. These collections contain a set of 600 specimens of characteristic ores of Colorado, particularly rich in tellurids, the Guggenheim systematic collection of minerals, and the G. H. Stone collection of 140 specimens of typical rocks of the Cripple Creek region.

LANTERN SLIDES, ETC. There is a large collection of biological, geological, and scenic slides and negatives, with many prints therefrom arranged in swinging cabinets.

PALEONTOLOGY. Invertebrates, on exhibition, 3000±, in storage, 30,000±, types and figured specimens, 60; Vertebrates, on exhibition, 50, figured specimens, 3; Plants, on exhibition, 200, in storage, 2500, types and figured specimens, 49. Among the plant and invertebrate material not yet worked up, there are undoubtedly many new species.

Zoölogy. Shells, on exhibition, 407, in storage, 15,000±, types and figured specimens, 2; Insects, on exhibition, 50 Riker mounts and 2 display cases, in storage, 2000±; Other invertebrates, 50; Fishes, on exhibition, 250, in storage, 2000±, types and figured specimens, 1; Batrachians, on exhibition, 10, in storage, 50; Reptiles, on exhibition, 5, in storage, 50; Birds, on exhibition, 245, in storage, 400±; Mammals, on exhibition, 47, in storage, 150; Bird nests, on exhibition, 53, in storage, 55; Bird eggs, on exhibition, 140, in storage, 667.

Historical Sketch. This museum originated in 1902, with the appointment of the present curator and the provision of display cases for material belonging to the biological departments, hitherto stored. In 1909, the curator was for the first time regularly employed to give his whole time to the work, with the rank and pay of a full professor.

Financial Support. A yearly appropriation, optional with the regents of the university.

Building. At present the collections are housed in the Hale Scientific Building, but a museum building is soon to be erected.

Administration. By a curator who is responsible to the board of regents of the university.

Scope. The collections are used chiefly for teaching purposes. Much stress is laid on exploration and research by the curator and heads of the scientific departments, the most notable work having been done upon the tertiary fauna and flora of Florissant, the cretaceous faunas of northern Colorado, and the botany of Colorado.

Publications. Papers based upon museum material have been published in technical magazines, proceedings of learned societies and the University of Colorado Studies.

Attendance. Open free to the public during the academic year from 8 to 5, and on application at the office during vacations.

COLORADO SPRINGS:

COLORADO COLLEGE.

The college maintains in Palmer Hall the following collections, in charge of Edward R. Warren, director, open to the public on weekdays from 2 to 5.

Anthropology. The anthropological department contains a large amount of pottery from Missouri, New Mexico, and Peru, the Bixby-Lang and Deane collections from the cliff dwellings, and a collection of Egyptian antiquities received from the Egyptian Exploration Society, of which the college is a member.

Mineralogy. The collection in mineralogy includes 1450 specimens of common, commercial, and rare minerals.

Paleontology. The foundation for the collection in vertebrate paleontology was laid by the purchase of the collections of Professor Cragin, consisting of about 8000 specimens, containing the types of many new species and some new genera of fossils. Among the types the most important is the large plesiosaurian reptile *Trinacromerum*, described from the cretaceous of Kansas in 1888. The collections include also an extensive series of casts of fossil vertebrates, including a megatherium and a restoration of the mammoth. Invertebrate paleontology is represented by specimens illustrating the geological record and by a series of casts of noted specimens. Paleobotany is represented by 2 cases of carboniferous, cretaceous and oligocene plant remains.

Zoölogy. The collections in invertebrate zoölogy comprise representatives of the different groups, including a large series of the butterflies and moths of Colorado, mounted in Denton tablets, and a representative series of the Myxomycetes of Colorado. The vertebrate collections comprise the W. S. Stratton collection, containing 29 species of fishes, 23 species of reptiles, 442 species of birds, and 170 mammals; the Aiken collection of Colorado and other birds, presented by Gen. Wm. J. Palmer; and the Warren collection of 50 Colorado mammals.

DENVER:

COLORADO MUSEUM OF NATURAL HISTORY. (City Park.)

Staff. Director, J. D. Figgins; Curators, Victor H. Borcherdt (mammals), L. J. Hersey (ornithology), E. J. Osler (entomology), W. S. Ward, (geology and art); Taxidermist-in-chief, Victor H. Borcherdt; Assistants in taxidermy, cabinet makers, watchmen, firemen, etc.

Art. Prints and engravings, 52; Oil paintings, 74; Water colors, 3; Ceramics, 250. There are also extensive loan collections of Japanese and Chinese art.

Botany. A beginning has been made in botanical collection but no material is as yet on exhibition.

Commerce and Industry. 1 miniature gold mine; 1 case of steel products, 1200 pieces; 1 case of miner's tools, 13 pieces; 1 case of marbles, 125 pieces; 1 case of carborundum products, 400 pieces; 1 case of graphite and elaterite; 1 case of petroleum products, crude and finished, 175 pieces; 3 cases of varieties of coal, 400 pieces; 1 case of wicker baskets, 100 pieces; 1 case of Philippine hats and head-gear, 75 pieces; 1 case of necklaces, pottery, and baskets from South America.

GEOLOGY. Minerals, on exhibition, 6300, in storage, 5000. The collection contains unique specimens of gold leaf and wire of considerable intrinsic value.

ZOÖLOGY. Shells, 400; Insects (lepidoptera), on exhibition, 5000, in storage, 50,000, including 250 co-types of lepidoptera and 250 co-types of coleoptera; Birds, mounted single specimens, 145, groups, 22; Mammals, on exhibition, 64, in storage, 53. 6 large groups of mammals are mounted in natural surroundings.

HISTORICAL SKETCH. Founded in 1902, with the purchase of the collection of O. E. Carter, for which the sum of $10,000 was paid. At the same time, $15,000 was subscribed by enthusiastic citizens for the purpose of erecting a building to house the collections.

FINANCIAL SUPPORT. An optional appropriation from the city of $20,000 per annum, supplemented by private contributions.

BUILDING. Erected in 1906, at a cost of $107,000, paid for by public funds and private subscription. The building affords about 23,289 square feet of floor space available for exhibition, and about 5000 for offices, workrooms, etc.

ADMINISTRATION. By a board of 25 trustees, of which the mayor is a member ex-officio, acting through an executive committee.

SCOPE. The purpose of the museum is instruction of the public by exhibition primarily of the natural history of Colorado, and secondarily of art and industry.

ATTENDANCE. Open free to the public daily from 10 to 5 (except Sunday forenoon). The total attendance averages 12,000 per month.

COLORADO SCIENTIFIC SOCIETY. (1510 Court Place.)

This society maintains a small museum in its rooms, under the care of Rebecca M. Riddle, assistant secretary. The collections include about 2000 minerals and 1000 rocks, chiefly Colorado material; a good collection of meteorites; a unique collection of arsenic ores from Arizona; and about 700 fossils. A library of 5000 volumes and 10,000 pamphlets, dealing chiefly with geology, metallurgy, engineering, etc., is also open to the public.

DENVER ARTISTS CLUB. (Public Library.)

This society has an exhibition hall on the top floor of the public library building, where it holds about six exhibitions of loan pictures annually, and hopes ultimately to maintain a permanent exhibition.

EAST SIDE HIGH SCHOOL.

This school maintains an educational museum in charge of G. L. Cannon and Ellsworth Bethel, instructors in biology. The collections comprise about 10,000 specimens, chiefly Colorado material, including rocks, minerals, fossils, plants, birds, marine invertebrates, and archeological material. This collection is located on the upper floor of the school building and is open to the public during school hours.

STATE BOARD OF HORTICULTURE.

This board maintains a small museum in its rooms in the basement of the capitol building, in charge of Mrs. Martha Shute, assistant secretary. The collections include agricultural and horticultural products of Colorado; exhibits of injurious insects; and native flowering plants.

STATE BUREAU OF MINES.

The bureau maintains in the capitol a collection of the minerals and ores of the state, arranged by counties; a general series of economic minerals and mineral products; the Ellsner collection of minerals from all parts of the world.

STATE HISTORICAL AND NATURAL HISTORY SOCIETY.

This society maintains extensive collections in ethnology, zoölogy, paleontology, and botany, as well as many objects identified with the pioneer period in the history of the state.

The department of ethnology includes over 4000 articles from the cliff dwellings. The collections in ornithology include nearly 500 mounts and about 2100 skins of Colorado birds. In other branches of zoölogy there is a good representation of Colorado mammals, together with some 8000 local insects and about 7500 marine and fresh-water invertebrates. In paleontology there is a large collection of fossils from the Florissant beds. The herbarium comprises the Ellsworth Bethel botanical collection of 20,000 specimens, rich in cryptogamic material, especially fungi.

The museum is housed in the rooms of the society in the state capitol, and was opened to the public in 1906. It is supported by funds appropriated by the General Assembly, and is administered for the benefit of the general public under the charge of Jerome C. Smiley, curator, and Horace G. Smith, assistant.

The society maintains a library of about 30,000 books, pamphlets, files of newspapers, etc., including the Edward B. Morgan collection of Colorado material.

WAR RELIC DEPARTMENT.

This department maintains a museum, in charge of W. W. Ferguson, custodian. The collections include over 3000 articles of historical interest, housed at present in the state house, but soon to be removed to a new building in course of erection in May, 1910. The nucleus of the museum is a collection made by Cecil A. Deane, and transferred in 1895 to the state. Admission is free, and the attendance has been estimated at 50,000 a year.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park, established in 1897, containing 200 birds and 155 mammals.

FORT COLLINS:

STATE AGRICULTURAL COLLEGE. Museum.

The collections, which are rich in local material, are in charge of the heads of the several departments and comprise a small collection in ethnology; 7000 botanical specimens, including 1000 species of Colorado phanerogams and 300 species of Colorado fungi; small working collections of minerals and rocks, and about 1000 specimens of ores; 550 specimens in paleontology; and an extensive zoölogical collection, including 2000 shells, 80,000 insects, 500 other invertebrates, 20 fishes, 50 batrachians, 75 reptiles, 1200 birds, and 125 mammals.

GOLDEN:

COLORADO SCHOOL OF MINES. Mineralogical Museum.

This museum is in charge of H. B. Patton, professor of geology and mineralogy and, although used primarily for instruction, is open free to the public.

COLLECTIONS. Minerals: a synoptic collection of 370; a working collection of 21,000±; a display collection of 1305; a supplementary collection of 950; the Patton collection of 970; and a crystal collection of 1800. Rocks: a synoptic collection of 1800; a working collection of 748; a United States geological survey educational series of 156; and the Patton collection of 1700. Fossils: a display collection of 342; and a miscellaneous collection of 1360. Many of the Colorado minerals are of special interest, more particularly the zeolites of Table Mountain, Golden.

The school also possesses a museum of applied chemistry, including mounted specimens of raw materials, main products, by-products, and waste products of the various branches of technical chemistry and metallurgy, and a metallurgical collection of models illustrating the best types of furnaces in this and other countries.

GREELEY:

STATE NORMAL SCHOOL.

The school has undertaken the organization of museums for teaching purposes in connection with its several departments of study. A bulletin describing the collections was issued in May, 1908.

CONNECTICUT

HARTFORD:

CONNECTICUT HISTORICAL SOCIETY.

The secretary and librarian reports that the society maintains a small museum, of which he is the custodian, but no further information regarding the collections has been received.

THEOLOGICAL SEMINARY. (Broad St.)

The seminary is the custodian of the large collection of ethnographical specimens collected by missionaries of the American Board of Commissioners for Foreign Missions, Boston, with which are included similar articles belonging to the seminary itself. It also possesses the Paton Palestinian ethnological collection; and has a full set of lantern slides illustrating the archeology, geography, and ethnology of Palestine.

TRINITY COLLEGE. Museum.

The collections include a fair representation of the minerals; the Ward collections of rocks; rocks of the New York series, and of the stratigraphical series; a local herbarium; a few cases of Indian and other relics; Ward's collection of fossils and casts of fossils; a fair representation of vertebrates, including some good mammalian skeletons; small local collections of insects, the fauna of Long Island Sound, Blaschka models of Hydrozoa, and a large collection of unidentified shells. These collections are in charge of the professor of natural history, and though used primarily for college purposes, are open to visitors.

WADSWORTH ATHENEUM.

STAFF. Chief curator, Frank Butler Gay; Curators, John H. Sage (natural history), Henry D. Miller (mineralogy), Albert Hastings Pitkin (ceramics).

COLLECTIONS. The art collections include paintings, ceramics, firearms, statuary, etc. Among the artists represented are Lawrence, Gainsborough, Raeburn, Morland, Constable, Ostade, Heernskerk, Van der Neer, Weenix, Van der Helst, Corot, Troyon, Jacque Lhermitte, Pasini, Isabey, Clays, Mesdag, Dupre, Copley, Trumbull, Stewart, Cole, Inness, Wyant, and others. There is also a collection of early books and prints to illustrate the development of printed pictures, made by William C. Prime. In a portion of the building known as the Morgan Memorial is a remarkable collection of tapestries loaned by Mr. J. Pierpont Morgan.

The natural history collections include an especially choice collection of Connecticut Valley birds, bird eggs, shells, minerals, etc.

Data concerning the building and financial support have not been received.

LITCHFIELD:

LITCHFIELD HISTORICAL SOCIETY.

The society maintains a museum of local history, including war relics; old china, furniture, tools, coins, articles of clothing, etc.; autographs, portraits, and medals; and a library of books of local interest, files of newspapers, etc. These collections occupy about 2250 square feet of floor space in a building erected by Mrs. Emily N. Vanderpool, in memory of her son. The museum is in charge of Mrs. Vanderpool, curator, and is open to the public on week-days in summer and twice a week in winter.

MERIDEN:

MERIDEN SCIENTIFIC ASSOCIATION.

The association possesses a geological and mineralogical collection of about 3000 specimens.

MIDDLETOWN:

MIDDLESEX COUNTY HISTORICAL SOCIETY.

This society has a museum of about 2000 articles of historical interest, military, naval, civil, religious, and ethnological, pertaining mainly to the county, state, and the United States, in charge of A. R. Crittenden, curator. It also has a library of 2500 or more volumes with many pamphlets, documents, letters, and historical engravings, in charge of Frances M. Pelton, librarian.

WESLEYAN UNIVERSITY. Museum.

STAFF. Curator, ———.

ANTHROPOLOGY. 3400± specimens, rich in material illustrating the life of American Indians, largely from localities in New England, from burial mounds near Chattanooga, and from California. There is also a large collection from China, the South Sea Islands, and Africa.

BOTANY. Cryptogams, 300±; Phanerogams, 10,000±; Specimens of wood, alcoholic specimens of fungi, and miscellaneous botanical specimens, 1500±.

GEOLOGY. Minerals, on exhibition, 7000±, in storage, 10,000±; Rocks, on exhibition, 1000±, in storage, 1000±. There is a collection of dynamic geology, illustrating systematically the work of atmospheric, aqueous, organic, and igneous agencies. The minerals are rich in material from Middletown, Portland, and Haddam.

NUMISMATICS. 7000± coins and medals. Among these are 2000± Chinese coins, many of which are ancient and rare, presented by Rev. M. L. Taft; a collection of historical medals and facsimilies of Greek and Roman coins (with some originals), numbering 1000± specimens, presented by Stephen H. Olin.

PALEONTOLOGY. Invertebrates, on exhibition, 10,000±, in storage, 4000±; Vertebrates, on exhibition, 2000±; Plants, on exhibition, 2000±, in storage, 500±. These collections include a fine representation of fishes from the triassic shales of Durham and Guilford, Conn., and considerable material from the Green River beds of Fossil, Wyoming; also casts of *Megatherium* and other large fossil vertebrates.

ZOÖLOGY. Shells, on exhibition, 30,000±, in storage, 60,000±; Insects, on exhibition, 2000±, in storage, 3000±; Other invertebrates, on exhibition, 7000±, in storage, 3000±; Fishes, on exhibition, 1500±, in storage, 500±; Batrachians, on exhibition, 200±; Reptiles, on exhibition, 500±, in storage, 100±; Birds, on exhibition, 1000±, in storage, 700±; Mammals, on exhibition, 400±. These collections include full representations of the vertebrates of North America and of the marine invertebrates of the New England coast. The large collection of shells was obtained chiefly by the purchase of the collection of Dr. Simeon Shurtleff.

HISTORICAL SKETCH. The collection of museum material was commenced at the time of the founding of the university in 1831. John Johnston, professor of natural science for many years in the early history of the college, collected many specimens from the rich mineralogical localities in the vicinity of Middletown. The Franckfort collection, rich in minerals from European localities, was purchased in 1858, and the Shurtleff collection of shells, birds, etc., was purchased in 1868. In 1871, George Brown Goode became connected with the museum, which owes much to his energy as a collector and to his genius as a museum administrator. Since 1893, Mr. Loper, the recent curator, has made extensive collections of fossils in the vicinity of

Middletown, Valcour Island, Nova Scotia, Maryland, Colorado, and Wyoming.

Financial Support. The museum has no separate endowment, salaries being paid from the funds of the university. Money for occasional purchase of specimens has usually been raised by special subscription.

Building. The two upper stories of the natural science building, Orange Judd Hall, are used for the museum. 11,000 square feet of floor space is available for exhibition, and 2000± for offices, workrooms, etc.

Administration. Under the control of the board of trustees of the university.

Scope. The collections are chiefly used for college teaching, but some emphasis is laid upon instruction of the general public and of pupils of the public schools.

Publications. From 1876 to 1892 an annual report was published, giving lists of accessions and other information. Since that date, the important facts in regard to the museum have been given in the semi-annual bulletins of the university.

Attendance. Open free to the public on Wednesday and Saturday afternoons, and at other times on special application; to students of the university, at all times.

NEW BRITAIN:

NEW BRITAIN INSTITUTE.

This library possesses 8 oil paintings, 3 of which were purchased from the Talcott Art fund; and a collection of 157 mounted birds, not yet arranged for exhibition. They are to receive, as soon as accommodations can be prepared, 1480 named and classified minerals, 500 shells, and 500 fossils.

NEW HAVEN:

NEW HAVEN COLONY HISTORICAL SOCIETY. (144 Grove St.)

This society possesses an unclassified collection of Indian flints and arrowheads, and objects, documents and prints relating to local history, in charge of Frederick Bostwick, curator. The society also possesses a library of 7000 volumes and 8000 pamphlets relating to historical and genealogical subjects.

YALE UNIVERSITY. School of the Fine Arts.

The school maintains an art museum in charge of John F. Weir, director, and George H. Langzettel, assistant curator. The collections include the Jarves gallery of Italian art numbering 122 paintings, dating from the 11th to the 17th centuries; the Trumbull gallery of historical portraits and other works of modern art; a collection of original sketches by the old masters; about 150 casts and marbles representative of Greek and renaissance art; a valuable collection of old Chinese porcelain and bronzes; an extensive series of Belgian wood carvings of the 17th century, the confessionals and wainscoting of an old chapel in Ghent; and a considerable collection of autotypes.

There is also an art library containing technical handbooks and the principal English, French, and German art periodicals in complete sets, besides collections of etchings and engravings.

The museum is open free to the public from October 1 to July 1 on week-days from 1 to 5, and on Sundays from November 1 to May 1 from 1.30 to 4.30. During the summer vacation the galleries are open from 9 to 1 and 2 to 5, when a fee of 25 cents is charged. This fee is also charged when special loan exhibitions are organized, in order to meet incidental expenses.

YALE UNIVERSITY. Botanical Garden.

The garden was established in 1900 on the estate of the late Prof. Othniel C. Marsh, who bequeathed the place to the university for this purpose. It is connected with the Yale Forest School and is under the care of James W. Toumey, director.

YALE UNIVERSITY. The Eaton Herbarium.

This collection was given by the family of the late Prof. Daniel C. Eaton in 1896, in accordance with his wishes, on condition that a suitable fireproof room be provided for it on or before October 1, 1896, and that proper provision be made for its care and preservation; also that it be kept as a separate collection, or else that the sheets be marked with some distinguishing stamp or label, as "The Eaton Herbarium."

YALE UNIVERSITY. Peabody Museum of Natural History.

Staff. Curators, A. E. Verrill (zoölogy), Edward S. Dana (mineralogy), Charles Schuchert (geology), G. F. Eaton (osteology), G. G. MacCurdy (anthropology); Associate curators, R. S. Lull and G. F. Eaton (vertebrate paleontology); Lecturer on paleobotany, G. R. Wieland; Chief preparator, Hugh Gibb; 2 preparators, 2 museum assistants, 1 librarian, and 1 janitor.

Anthropology. A general collection, comprising stone implements, the Moseley collection of Indian baskets, Panama pottery, 1 Mexican calendar stone, the Prudden collection of material from the ancient pueblos and cliff dwellings of the southwest United States, the

Hoppin Eskimo exhibit and other smaller series. Much of the material was presented to the university by Professor Marsh.

GEOLOGY. The mineral collection is one of the best in America; it was begun in 1804 by Professor Silliman and later developed by Professors James D. Dana and Edward S. Dana. It comprises a systematic series and several special collections, including the Gibbs collection, purchased in 1825; famous collections of meteorites including the Gibbs iron from Texas, the Weston meteorite, nearly 1000 specimens from the great shower of 1890 in Winnebago County, Iowa, and the Hubert A. Newton collection.

PALEONTOLOGY. These collections consist of 6500 drawers of study vertebrate, invertebrate, and plant fossils, besides two rooms of exhibition specimens, brought together in the main by Professors O. C. Marsh and Charles E. Beecher since 1866, when the former was appointed professor of paleontology. Nearly all of this material is from America and chiefly from the Rocky Mountain and Great Plains regions. Among the more important fossil vertebrates are the triassic, jurassic, and cretaceous dinosaurs, the toothed birds from the cretaceous, the largest of pterodactyls (*Pteranodon*), *Archelon*, the largest of marine turtles, and an extensive series of tertiary mammals, among which is the famous Marsh collection of American fossil horses that formed the basis of Huxley's lectures in 1876. Among the invertebrates is the unique series of trilobites, preserving the antennae and the ventral limbs, and three large slabs of crinoids from the paleozoic and cretaceous. Of fossil cycads from the jurassic of South Dakota there are more than 500, preserving not only the microscopic structure of the trunk but as well the unemerged flower buds.

ZOÖLOGY. Nearly all of the extensive collections are the work of Professor Verrill. Among the invertebrates, mention may be made of the corals (one of the most extensive collections in the country) and the nearly complete collection of the marine invertebrates of New England.

HISTORICAL SKETCH. In 1866, George Peabody, of London, but of Massachusetts birth, entrusted to a board of trustees, selected by himself, the sum of $150,000 to found and maintain a museum of natural history, especially in the departments of zoölogy, geology, and mineralogy, in connection with Yale College. Of this sum, $100,000 was devoted by Mr. Peabody to the erection, on land to be given for that purpose by the president and fellows of Yale College, of a fireproof building, planned with special reference to its subsequent enlargement, to be, when completed, the property of Yale College. Of the remainder of the gift, $20,000 was set apart to accumulate as a building fund, and $30,000 to meet by its income from investment the expenses attending the care of the museum, the increase of its collections, and the general interests of the departments of science before named.

FINANCIAL SUPPORT. An income of $30,000 from the original Peabody endowment, supplemented by liberal annual appropriations from the university.

BUILDING. In 1876, the first wing of the museum—the part now standing—was completed and furnished with cases at a cost of $175,000 the whole outlay being met by the accumulated building fund. The central part of the projected structure and the south wing remain to be built whenever the means available for the purpose shall be adequate.

ADMINISTRATION. By a self-perpetuating board of trustees.

SCOPE. The primary purposes of the museum are research, university teaching, and public instruction.

ATTENDANCE. Open free to the public on week-days throughout the year from 9 to 5, and on Sundays from November to May from 1.30 to 4.30.

YALE UNIVERSITY. Steinert Collection.

Of special interest to all students of music is the M. Steinert collection of musical instruments and manuscripts. It contains a large number of ancient keyed and stringed instruments in a state of excellent preservation, and shows the development of these instruments during a period extending over several centuries. This collection, which also contains a number of ecclesiastical manuscripts, is of much historical importance. It was given to the university by Mr. Morris Steinert of New Haven and is kept in Memorial Hall. Open to the public on Sunday afternoons in winter; at other times accessible upon inquiry at the office of University Dining Hall.

NEW LONDON:

NEW LONDON HISTORICAL SOCIETY.

This society is said to maintain a collection of historical relics in the Shaw Mansion purchased for this purpose by public subscription.

STORRS:

CONNECTICUT AGRICULTURAL COLLEGE.

The college maintains collections for teaching purposes, including about 75 Indian implements; 700 minerals; 900 specimens of historical and economic geology; 500 fossils; 1500 botanical specimens representing the flora of Connecticut; and a zoölogical collection of about 10,000 specimens, including a good collection of insects, a good collection of birds, particularly warblers, and a general synoptic collection in which the gastropods are best represented. The museum is in charge of G. H. Lamson, Jr., and occupies about 300 square feet of floor space in the main building of the college.

DELAWARE

NEWARK:

DELAWARE COLLEGE.

The college has teaching collections including 250 fossils; 600 minerals; 300 specimens of economic and historical geology; 200 invertebrate animals from the National Museum, and 200 collected locally; 200 vertebrates; and 1500 botanical specimens.

WILMINGTON:

HISTORICAL SOCIETY OF DELAWARE. (924 Market St.)

The assistant librarian reports that the society maintains a museum, but no further information has been received.

NATURAL HISTORY SOCIETY OF DELAWARE.

This society possesses a botanical collection of about 7000 specimens, made by the late William M. Canby.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 10 acres, established in 1905, containing 3 reptiles, 32 birds, and 35 mammals.

DISTRICT OF COLUMBIA

WASHINGTON:

ARMY MEDICAL MUSEUM.

A collection, consisting mainly of human pathology, with a department devoted to military and general hygiene, is maintained by an annual appropriation from Congress. The museum issues catalogs and occasional reports, is open free to the public, and is administered by a curator, Major F. F. Russell, and an assistant curator, Capt. Chas. F. Craig, responsible to the surgeon-general of the United States army. Three assistants, who are graduates in medicine, and two laborers make up the working force of the museum.

CATHOLIC UNIVERSITY OF AMERICA.

Professor Henry Hyvernat reports that the recent transfer and impending reorganization of the university museum make it impossible to give a report at present. The university is said by Merrill to possess a botanical collection of over 30,000 specimens, especially rich in plants of the Rocky Mountains and the Pacific coast, gathered by Professor Edward L. Greene, and containing types of several hundred species described by him.

CORCORAN GALLERY OF ART.

STAFF. Director, Frederick B. McGuire; Assistant director, C. Powell Minnigerode; 1 clerk and stenographer, 1 janitor, 1 engineer, 1 foreman, 7 guards and attendants and 3 char-women.

ART. Sculpture, about 350 pieces, including original marbles, casts of antique, renaissance, and modern sculpture, and 107 original Barye bronzes; Prints and engravings, the St. Memim collection of 820 engraved portraits; Oil paintings, 280±; Water colors, 15; Cloisonné, 6 pieces; Porcelains and glass, 15 pieces; Electrotype reproductions, 141 pieces.

HISTORICAL SKETCH. The art gallery and school were founded and endowed by the late William Wilson Corcoran in 1869, and opened to the public in 1874 in the building on the corner of Pennsylvania Avenue and 17th Street. The gallery was opened in the new building in 1897.

FINANCIAL SUPPORT. Annual income: from endowment, $35,000; from the art school, about $5000; from admission fees, about $3000.

BUILDING. Erected in 1893–7, at a cost of $650,000, paid from the endowment fund. About 35,000 square feet of floor space is available for exhibition purposes, and about 4000 for offices, workrooms, etc.

ADMINISTRATION. By a director, responsible to a board of trustees.

SCOPE. In connection with the gallery there is a free art school with classes in drawing and painting from the cast, life, etc., also portrait and still-life classes. The students number about 300. Loan collections and special exhibitions are placed in the gallery from time to time.

LIBRARY. 1000 volumes on the fine arts, used chiefly as a reference library by members of the staff and students of the school.

PUBLICATIONS. (1) Annual reports. (2) Catalogs of the permanent collection. (3) Catalogs of special exhibitions.

ATTENDANCE. The gallery is closed to the public every summer for necessary renovation. It is open during the remainder of the year, as follows: From November 1 to July 1, on Sundays from 1.30 to 4.30, on Mondays from 12 to 4, on other days from 9 to 4. Admission is free, except on Mondays, Wednesdays and Fridays, when an entrance fee of 25 cents is charged. The total attendence for the year 1908 was 133,973, including 10,427 pay admissions, and 123,546 free admissions.

GEORGETOWN UNIVERSITY. The Coleman Museum.

STAFF. Curator, Francis A. Tondorf; Assistants, C. J. Ramage, John Langdale, Edward Connelly.

ANTHROPOLOGY. 1400 specimens, including a complete series of Indian remains from the District of Columbia, and fine collections from Alaska and the Philippine Islands.

ART. Oil paintings by ancient and modern masters; valuable engravings; prints and photographs; and the Beauchamp Hughes collection of laces, pictures, ancient manuscripts, bronzes, china, and bric-a-brac.

BOTANY. A herbarium of about 300 specimens, representing the flora of the District of Columbia.

GEOLOGY. Minerals, on exhibition, 3130, in storage, 400+ ; Rocks, on exhibition, 1500, in storage, 300+ ; Relief maps, models, etc., 5. The collections include a complete representation of local minerals and rocks.

HISTORY. A collection of 120 Maryland colonial relics is contained in a special room intended for the exhibition of Maryland history.

NUMISMATICS. A complete set of pontifical medals, and foreign and domestic coins.

PALEONTOLOGY. About 1200 fossils, including several fine tusks of the mammoth from Alaska.

ZOÖLOGY. Shells, on exhibition, 3164, in storage, 400±, types and figured specimens, 100+ ; Birds, on exhibition, 1020, eggs, 1300, nests, 88; Mammals 100±. 10 small groups are exhibited in natural surroundings.

HISTORICAL SKETCH. In 1840 the collections had become sufficiently extensive to warrant the setting apart of a special room for their exhibition. In 1889 they were transferred to Coleman Hall in the main building.

FINANCIAL SUPPORT. Maintained by university funds.

Building. The collections occupy the north pavilion of the main building, to which has been given the name, Coleman Hall. 2440 square feet of floor space is available for exhibition.

Scope. Research, college teaching, and instruction of the general public.

Attendance. Open free to the public daily from 9 to 5. The number of visitors is estimated at 5000 annually.

GEORGE WASHINGTON UNIVERSITY MEDICAL SCHOOL.

The Medical School now has, in charge of F. F. Russell, professor of pathology and bacteriology, the teaching collection of human pathology which formerly belonged to the Columbian University.

HOWARD UNIVERSITY.

The department of biology and geology possesses teaching collections including a phanerogamic herbarium of about 7500 specimens, chiefly flora of the District of Columbia, with a general collection of about 2000 plants from the United States and Mexico, and 23 fascicles of native plants issued by the United States department of agriculture; about 1200 minerals and rocks; about 2000 invertebrates; and about 500 vertebrates, including 12 groups mounted in natural surroundings, and a good collection of skeletons in comparative anatomy. These collections are maintained from the general appropriation for the department, are used for teaching purposes, and are in charge of R. E. Schuh, professor of biology and geology.

UNITED STATES NATIONAL MUSEUM.

Staff. Secretary of the Smithsonian Institution, keeper *ex officio* Charles D. Walcott; Assistant secretary, in charge of the museum, Richard Rathbun; Administrative assistant, W. de C. Ravenel. *Department of anthropology:* Head curator, William H. Holmes; Curators, Walter Hough (ethnology), Aleš Hrdlička (physical anthropology), William H. Holmes (prehistoric archeology), J. M. Flint (medicine), A. Howard Clark (history); Assistant curators, I. M. Casanowicz (historic archeology), George C. Maynard (technology), T. T. Belote (history); Custodians, Paul Brockett (graphic arts), T. W. Smillie (photography); Collaborators, J. W. Fewkes (ethnology), J. D. McGuire (prehistoric archeology); Aids, T. F. Lane (physical anthropology), E. P. Upham (prehistoric archeology); Associates, Paul Haupt and Cyrus Adler (historic archeology). *Department of biology:* Head curator, Frederick W. True; Chief of exhibits, James E. Benedict; Curators, Gerrit S. Miller, Jr. (mammals), Robert Ridgway (birds), Leonhard Stejneger (reptiles and batrachians), B. W. Evermann (fishes), William H. Dall (mollusks), L. O. Howard (insects), Richard Rathbun (marine invertebrates), Frederick V. Coville (plants—National Herbarium); Associate curator, J. N. Rose (plants—National Herbarium); Assistant curators, N. Hollister (mammals), Charles W. Richmond (birds), Barton A. Bean (fishes), Paul Bartsch (mollusks), J. C. Crawford (insects), Mary J. Rathbun and Austin H. Clark (marine invertebrates), W. R. Maxon and P. C. Standley (plants—National Herbarium), O. F. Cook (cryptogamic collections—National Herbarium); Custodians, O. F. Cook (myriapoda), D. W. Coquillett (diptera), E. A. Schwarz (coleoptera), Harrison G. Dyar (lepidoptera), A. N. Caudell (orthoptera), Nathan Banks (arachnida), Otto Heidemann (hemiptera), C. W. Stiles (helminthological collections), W. T. Swingle (higher algae—National Herbarium), D. G. Fairchilds (lower fungi—National Herbarium); Assistant custodian, B. H. Ransom (helminthological collections); Collaborators, Mary Breen (mollusks), Harriet Richardson (marine invertebrates); Aids, J. H. Riley (birds), R. G. Paine (reptiles and batrachians), Alfred C. Weed (fishes), William B. Marshall (mollusks), Paul R. Myers (insects); Associates, Theodore N. Gill, C. Hart Merriam, W. L. Abbott, and Edgar A. Mearns (zoölogy), Edward L. Greene and John Donnell Smith (botany). *Department of geology:* Head curator, George P. Merrill; Curators, George P. Merrill (physical and chemical geology), F. W. Clarke (mineralogy), R. S. Bassler (invertebrate paleontology); Associate curators, W. H. Dall (invertebrate paleontology—cenozoic collection), David White (paleobotany); Assistant curators, F. B. Laney (physical and chemical geology), Joseph E. Pogue, Jr. (mineralogy), Lancaster D. Burling (invertebrate paleontology); Custodians, T. W. Stanton (invertebrate paleontology—mesozoic collection), T. Wayland Vaughan (madreporarian corals), James W. Gidley (mammalian collection), Charles W. Gilmore (reptilian collection), F. H. Knowlton (mesozoic plants); Aid, A. C. Peale (paleobotany); Associates, L. T. Chamberlain (mineralogy), Charles A. White (paleontology), Lester F. Ward (paleobotany). *Department of mineral technology:* Curator, Charles D. Walcott. *National Gallery of Art:* Curator, William H. Holmes. *Administrative staff:* Chief of correspondence and documents, R. I. Geare; Disbursing agent, W. I. Adams; Superintendent of construction and labor, J. S. Goldsmith; Editor, Marcus Benjamin; Editorial clerk, E. S. Steele; Assistant librarian, N. P. Scudder; Photographer, T. W. Smillie; Registrar, S. C. Brown; Property clerk, W. A. Knowles.

Collections. The readjustment and moving of the collections necessitated by the construction of a new building prevents the compilation of statistics regarding the collections.

The total number of specimens in all branches of natural history amounts to several millions, the annual accretion during several years having averaged about a quarter of a million specimens. An enumeration of the type specimens has not recently been made, but the number is exceptionally large. These natural history collections have been received in greater part from government surveys and explorations, and are richest in material from North America. Many other parts of the world are also well represented in one subject or another, especially Central America, the Philippines, Malaysia, and some portions of Europe, Africa, and South America. The deep-water zoölogical collections from both the Atlantic and Pacific oceans are the most extensive and important in existence.

The National Gallery of Art, as the department of fine arts is designated, has come into prominence during the past four years through the bequest of Harriet Lane Johnston, and the gifts of Charles L. Freer and William T. Evans, consisting mainly of paintings and oriental pottery, valued at not less than one and one-half million dollars.

The department of arts and industries, the proper development of which has been delayed by lack of space, but is now rendered possible by the new building, has had on exhibition the most complete collections of firearms in this country, boat and railroad models, electrical apparatus, time-keeping and measuring devices, ceramics, graphic arts, laces, embroideries, etc. Large collections of other subjects are in storage.

The historical collection is rich in materials illustrative of periods and of important events and personages connected with the history of the United States from the colonial period.

Historical Sketch. By congressional act of August 10, 1846, founding the Smithsonian Institution, that establishment was made the custodian of the national collections in both nature and art. The museum branch was definitely organized in 1850, the title "United States National Museum" being authoritatively given by congress in 1875. During the first few years the expenses of the museum were wholly met from the Smithsonian fund, and it was not until 1878 that the government began to provide entirely for its maintenance, through annual congressional appropriations.

Among important early sources of collections may be mentioned the United States Exploring Expedition of 1838 to 1842, the Perry Expedition to Japan, the North Pacific Exploring Expedition of the Navy, the railroad and wagon road surveys by the Army in connection with the opening up of the far west, the Canadian and Mexican boundary surveys, certain geological explorations, and the work of the Coast Survey in Alaskan waters, besides many expeditions organized or assisted by the Smithsonian Institution. Of more recent date are the investigations of the Bureau of Fisheries, the Geological Survey, the Bureau of American Ethnology, and the Bureaus of Plant Industry, Entomology, and Biological Survey of the Department of Agriculture. Of private donors, some of whom have made gifts of great extent and value, the list is very long.

Financial Support. By congressional appropriations, that for the fiscal year ending June 30, 1909, amounting to $318,080. For the fiscal year ending in 1910, the appropriation amounts to $565,500, the increased amount being called for by the approaching occupancy of the new building.

Buildings. The Smithsonian building, completed in 1857, at an expense of over $300,000, and designed in part for the museum, was, as early as 1872, turned over entirely to museum purposes, with the exception of the east wing, retained for the use of the institution proper. A separate building of brick, called for by the increase of the collections and having a main floor area of 103,000 square feet, was finished in 1881, at an initial cost of $250,000. There is now nearly completed, and in small part already occupied, a third building of granite, having a frontage of 560 feet and a floor area of about 10 acres, which has cost $3,500,000. It is intended for the departments of natural history, and will also temporarily house the National Gallery of Art, while the older buildings will be used for the collections of arts and industries. These buildings are all located on the Mall, between 9th and 12th streets.

Administration. The governing body of the Smithsonian Institution, and consequently of the National Museum, is a board of regents, comprising the vice-president and the chief-justice of the United States as *ex officio* members, three members of the United States Senate, three members of the House of Representatives, and six citizens at large. The authority of the board is exercised through its executive officer, the secretary of the Smithsonian Institution.

Scope. The museum is charged with three principal obligations, namely, the care and preservation of the national collections, research work in naming and classifying the specimens, and the promotion of education by the exhibition of such material as is suitable for that purpose. The interests of education are also subserved by the distribution of duplicate specimens to the higher grades of schools and colleges throughout the country. Very little field work is undertaken directly by the museum.

Four general divisions of the museum are recognized: (1) Natural history, including ethnology and archeology; (2) the fine arts; (3) the arts and industries; (4) history.

Library. About 36,000 volumes and 56,000 unbound papers, of a purely technical character, maintained primarily for the use of the staff, but accessible to any properly qualified persons.

Publications. (1) Annual Reports. (2) Proceedings. (3) Bulletins. The first mentioned are of the nature of administrative reports to congress. The Proceedings and Bulletins are mainly restricted to technical papers and monographs based upon the museum's collection. The difference between these two lies chiefly in the fact that the Proceedings consist of the shorter and the Bulletins of the longer papers. Of the Proceedings, 37 volumes have been published; of the Bulletin, 71 numbers, but a few of these extend to two or more volumes.

Attendance. Open free to the public on week-days from 9 to 4.30. Sunday opening is contemplated in the near future. The number of visitors is about 250,000 annually.

ZOÖLOGICAL PARK.

The federal government and city jointly maintain a zoölogical park of 166 acres, established in 1890, containing 124 reptiles, 713 birds, and 565 mammals.

FLORIDA

DELAND:

JOHN B. STETSON UNIVERSITY. Monroe Heath Museum.

This museum consists of collections prepared by the Ward Natural Science Establishment of Rochester, New York, and given to the university by Mrs. Monroe Heath of Chicago as a memorial to her husband. The collections comprise: Minerals, 725±; Rocks, 240±; Paleontology, 325±, including casts of fossil vertebrates; Zoölogy, 300±, mostly invertebrates. In addition to the above there are 80 Florida birds, the gift of Mr. John B. Stetson. The museum is intended for teaching and study purposes, and is in charge of John F. Baerecke, professor of biology and physiology.

ST. AUGUSTINE:

ST. AUGUSTINE INSTITUTE OF SCIENCE AND HISTORICAL SOCIETY.

This society maintains a museum begun in 1884 and now filling seven rooms. The collections include geology, natural history, prehistoric implements and weapons, and material relating to the early history of Florida.

GEORGIA

ATLANTA:

STATE MUSEUM.

Staff. Curator, S. W. McCallie.

Anthropology. A collection of 203 Indian relics.

Botany. 200 specimens of Georgia woods, consisting of sections of trees showing finished and unfinished surfaces, together with some finished products; and an economic exhibit of fruits and grains in glass jars.

Educational. 10 cases with exhibits of public school work.

Geology. Minerals, on exhibition, 1250±; Rocks, on exhibition, 250±; Minerals and rocks, in storage, 1000±; Building stones, 85 eight-inch cubes, including marble, granite, gneiss, hornblende, sandstone, serpentine, and Caen stone, from various localities in the state, uniformly dressed to show susceptibility to various methods of finishing; Marbles, 6 slabs from the quarries at Tate; Georgia ores, 149 specimens; Clays, etc.

Paleontology. 1000± specimens on exhibition.

Zoölogy. An economic exhibit of injurious insects, contained in 6 large cases.

The above collections occupy the corridors of the third floor of the state capitol, and are under the charge of the state geologist. They are open free to the public daily, except Sundays, from 8 to 5.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 140 acres, established in 1892, containing 10 reptiles, 132 birds, and 91 mammals.

MACON:

MERCER UNIVERSITY.

No information has been received regarding the collections of this university, which is said by Merrill to include 500 Indian utensils and weapons, about 600 botanical specimens, 2500 fossils, 1000 rocks and several thousand minerals, 1000 specimens of economic geology, and a small collection of meteorites including the Stewart and Putnam County stones (both described in the "American Journal of Science"). There are also about 600 zoölogical specimens.

OXFORD:

EMORY COLLEGE.

The museum of Emory College is in charge of H. H. Stone, curator, and is made up largely of Japanese, Chinese, and Indian curios, together with war relics, 200 fossils, 5000 minerals, and a collection of Georgia birds made rather for classroom use than for strictly museum purposes.

HAWAII

HONOLULU:

BERNICE PAUAHI BISHOP MUSEUM.

STAFF. Director, William T. Brigham; Honorary curator of mollusca, William H. Dall; Curator of Polynesian ethnology, John F. G. Stokes; Curator of Pulmonata, C. Montague Cooke; Honorary curator of entomology, Otto H. Swezey; Assistant in botany, Charles N. Forbes; Librarian, E. Schupp; Artist and modeler, John W. Thompson; 2 printers, and 2 janitors.

ANTHROPOLOGY. Archeology, foreign, 275; Ethnology, native, 4992, foreign, 3417. There are on exhibition 5 ethnological groups with casts from life. There are also a Hawaiian native grass house and a model of a Hawaiian temple.

ART. Prints and engravings, 50; Oil paintings, 44; Water colors, 11.

BOTANY. Cryptogams, 3104, including 27 types and figured specimens; Phanerogams, 2959, including 105 types and figured specimens. There are also 5000± duplicate and additional specimens, and 420 specimens of economic botany.

GEOLOGY. Minerals, on exhibition, 125, in storage, 50; Rocks, on exhibition, 522, in storage, 200±. Special mention may be made of a model of Kilauea volcano.

HISTORY. Mission history, 25; Modern Hawaiian history, 178.

PALEONTOLOGY. Invertebrates, 410.

ZOÖLOGY. Shells, on exhibition, 55,000±, in storage, 200,000±, types and figured specimens, 350±; Insects, on exhibition, 8268, in storage, 6135; Other invertebrates, on exhibition, 865, in storage, 520; Fishes, on exhibition, 292 painted casts, in storage, 3000±, types and figured specimens, 105; Reptiles, on exhibition, 43, in storage, 98;

Birds, on exhibition, 464, in storage, 4259, types and figured specimens, 144; Mammals, on exhibition, 45. There are 4 large and 7 small groups of animals exhibited in natural surroundings. Of these, 2 Hawaiian bird groups (*Phaëthon lepturus* and *Nycticorax nycticorax nævius*) are especially noteworthy.

Historical Sketch. The founding of the Bishop Museum resulted from an unwritten agreement between three Hawaiian princesses, Mrs. Bernice Pauahi Bishop, Princess Ruth Keelikolani, and Queen Emma, widow of Kamehameha IV, to bequeath their respective collections as material for a museum of Kamehameha relics. The final establishment of the museum was made possible by the munificence of the Hon. Charles Reed Bishop, who in 1889 provided funds for the housing of these three collections. At this time other collections were purchased by Mr. Bishop as follows: ethnological collections of J. S. Emerson and G. H. Dole from Hawaii, of Eric Craig from Polynesia and Melanesia, and a choice Papuan collection made in German New Guinea; also an extremely valuable collection of Hawaiian birds made by Mr. Mills. In 1891 the collections of the Hawaiian government museum were loaned to the Bishop Museum. In the same year Mr. Bishop transferred the museum to the gentlemen then acting as trustees of the Bernice P. Bishop estate, and provided an endowment consisting of land valued at $40,000 and $30,000 in 6 per cent government bonds. In 1894 the Hawaiian provisional government deposited the royal feather robe, crown, and thrones in the museum. In 1895 the large and varied Pacific collection of the American board of commissioners for foreign missions was loaned to the museum and later purchased by Mr. Bishop. In 1896 control of the museum passed into the hands of the Bernice P. Bishop museum trust. At this time Mr. Bishop added property to the value of $203,000 to the endowment of the museum, and in the following year he made a further endowment of $92,000.

Financial Support. An income of $35,000 a year from its endowment.

Building. The first building was erected in 1890 at a cost of $66,700, defrayed by Mr. Bishop. In 1894 an additional building was erected by Mr. Bishop at a cost of $77,200. In 1903 a new Hawaiian hall was erected by Mr. Bishop at a cost of $126,300. A building designed to provide laboratories and storerooms is about to be erected. There is at present 17,312 square feet of floor space available for exhibition, and 5200 for offices, etc. Of the latter, 2800 square feet will be converted to exhibition space on completion of the new laboratory.

Administration. By a director, responsible to the board of trustees.

Scope. The primary purposes of the museum are research and exploration.

Library. 8000 volumes and pamphlets of a scientific character intended for the use of the staff.

Publications. (1) Occasional Papers, containing annual reports and research articles. Of this series two complete volumes have been issued and two others are in course of publication at the end of 1909. (2) Memoirs, devoted to research articles. Two complete volumes of this series have been issued. (3) Fauna Hawaiiensis, three volumes issued.

Attendance. The museum is open free to the public on Friday and Saturday of each week. The attendance for 1909 was 11,846.

BOARD OF COMMISSIONERS OF AGRICULTURE AND FORESTRY.

This board is the agricultural department of the territory of Hawaii, and although it does not maintain a formal museum it has working collections of insects and a growing herbarium. The insect collection consists of approximately 10,000 specimens representing 2500 species and including 6 type specimens of Aleyrodidae and 3 of Coccidae. There are also about 5000 unmounted specimens. Special attention is paid to Coleoptera and Coccidae.

The herbarium consists of approximately 800 cryptogams and 6100 phanerogams including 6 types of genera.

There is also a library of about 10,000 volumes related especially to entomology, forestry, and botany, and including a somewhat extensive collection of tropical and subtropical floras and manuals of botany.

The collections and library are open free to the public for reference, and special assistance is given those desiring to carry on particular investigations.

DAMON PRIVATE MUSEUM.

Mr. S. M. Damon has on his estate of Moanalua a series of about 500 ethnological specimens, mostly native, and about 35 pictures, including oils, water colors, and engravings. These are arranged for the purpose of exhibition in two native grass houses which are open free to the public on Saturday afternoons.

HAWAIIAN SUGAR PLANTERS' ASSOCIATION. Experiment Station.

The insect cabinets of the station contain about 5000 specimens of local insects and about 6000 specimens of foreign insects in addition to 5000–10,000 unmounted specimens. These collections are chiefly of economic importance. The foreign insects are from regions where sugar cane is grown, viz: Mexico, Fiji, Australia, Malasia, and China. There are 700–800 type specimens which will probably eventually be deposited in the United States National Museum. The library of the station contains over 1000 volumes on entomology.

ST. LOUIS COLLEGE.

The college has a collection of ethnological and natural history specimens.

IDAHO

MOSCOW:

UNIVERSITY OF IDAHO.

The university museum was destroyed by fire in 1906, with the exception of the mineral collections. There is now no central museum and such collections as exist are distributed among the scientific departments.

ILLINOIS

BLOOMINGTON:

ILLINOIS WESLEYAN UNIVERSITY. Powell Museum.

This museum was established in 1852 with 1700 specimens, collected in the Rocky Mountains by Major J. W. Powell, to which has been added the Lichtenthaler collection of shells and algae. The museum now comprises 40,000 labeled specimens on exhibition, and about 100,000 more accessible for study. In ethnology, there are large collections of Zuni and Moqui utensils, articles of dress, etc.; and utensils of the cliff dwellers and mound builders. In botany, there are 1000 cryptogams and 6000 phanerogams. Geology and paleontology are represented by good general collections. In zoölogy, there are 10,000, species of shells, a collection of insects, 600 birds, 200 mammals, etc.

McLEAN COUNTY HISTORICAL SOCIETY.

This society maintains a collection of about 250 objects of historical interest, a library of about 600 volumes, a large collection of portraits and photographs of pioneers and distinguished men of McLean County, and about 100 unpublished manuscripts. These collections have been housed in the society's room in the McLean County court house since 1903 and are under the care of Milo Custer, custodian.

CARLINVILLE:

BLACKBURN COLLEGE. Taylor Museum.

The collections, which occupy one floor of Robertson Hall, were donated to the college by Dr. Julius S. Taylor in 1882. They contain 25,000 fossils, representing nearly every epoch throughout the paleozoic and mesozoic eras, and a large part of the Van Cleve corals figured in the Indian report; 8000 minerals; 500 Indian relics; and small working collections in botany and zoölogy.

CHICAGO:

ART INSTITUTE OF CHICAGO.

Staff. Director, Wm. M. R. French; Assistants to the director, Bessie Bennett, Lucy Driscoll; Secretary to the director, C. H. Burkholder; Librarian, Mary Van Horne; Assistant librarian, Edna Fairchild; Reference librarian, Nancy Adis; Department of stereopticon slides, Edith Emerson; 1 stenographer, 1 door-cashier, 10 guards, 5 gallery-men, 13 janitors, 6 engineers, and 1 office boy.

Art. Sculpture, 1472± objects, including very large collections of reproductions in marbles and plaster, metal work, bronzes, fragments, medals, plaquettes; Prints and engravings, 500; Framed drawings, 186; Oil paintings, 452; Water colors, 25; Ceramics, 389±; Textiles, 1623± pieces; Egyptian, Greek, and Roman antiquities, 54 cases (an important department); Ivory carvings, 100± (loaned); Musical instruments, 111± (loaned), 28 (owned); Oriental art, jades, crystals, lacquer, shrine, enamel, porcelain, numerous small objects, 717. Among the more notable exhibits may be mentioned: The Field collection of 41 pictures, representing chiefly the Barbizon school of French painters; 13 works of the highest value by old masters of the Dutch school, from the Demidoff collection; the Albert A. Munger collection of paintings; and the Mr. and Mrs. Samuel M. Nickerson collection of fine Japanese, Chinese, and East Indian objects of art, and of modern pictures.

Historical Sketch. The Art Institute had its beginning in a school of art practice, established in Chicago in 1886, and soon after organized into the Chicago Academy of Design. After serious struggles, a new organization was formed, called at first the Chicago Academy of Fine Arts, but subsequently changed to the Art Institute of Chicago, and incorporated in 1879. The present building was formally opened as a museum on December 8, 1893.

Financial Support. The institute has the following sources of income: from endowment, $20,000; from the city, $65,000, comprising the one-fourth mill tax from the South Park district; from the school of the institute, $71,000; from memberships, $35,000; from admission fees, $6887; from the sale of publications, $2213.80.

Building. Erected in 1892–3 at a cost of $1,000,000, paid for by voluntary subscription and by a sum of $200,000 from the World's Columbian Exposition. About 62,000 square feet of floor space is available for exhibition purposes, 45,189 for school purposes, and 11,310 for offices, workrooms, etc. During 1897 a lecture room, seating 500 persons, was built and presented as a memorial to Alexander N. Fullerton by his son. In 1900–01 the Ryerson Library was built and presented by Martin A. Ryerson. In 1903 Blackstone Hall was completed and is now occupied by the great portals of French cathedrals and historic sculpture.

Administration. By an executive committee appointed by the trustees, who are elected by a board of governing members.

Scope. A school of drawing, illustration, painting, sculpture, normal instruction, and designing is a vital part of the institution and is said to be the most comprehensive and the largest school of fine arts in the United States. It occupies the ground floor of the building and its pupils number about 2700 each year, including 105 of the Chicago School of Architecture, which is an alliance formed between the Art Institute and the Armour Institute of Technology. The school maintains day, evening, Saturday, and summer classes, and includes upon its staff 8 officers and assistants, 50 teachers, and 30 student teachers. The galleries are arranged and intended for the instruction and entertainment of the general public and their influence is furthered by special exhibits and the exhibition of important loan collections. The giving of lectures also forms a part of the activity of the institute.

Library. 6540 volumes and a large collection of pamphlets, photographs, Braun autotypes, and lantern slides, on subjects relating to the fine arts, and accessible to students of the school and to the general public.

Publications. (1) Bulletin, issued quarterly. (2) General catalog of the permanent collection. (3) Catalogs of passing exhibitions. (4) The Scammon Lectures, published from time to time. (5) A school catalog, published annually.

Attendance. Open daily from 9 to 5. On Wednesdays, Saturdays, and Sundays, admission is free; on other days an entrance fee of 25 cents is charged, except to members, their families and out-of-town guests, children under 10 years of age, teachers of the public schools, and exhibiting artists.

CHICAGO ACADEMY OF SCIENCES.

STAFF. Curator-in-charge, Frank C. Baker; Honorary curators, T. C. Chamberlin (general geology), Stuart Weller (paleontology), Oliver C. Farrington (mineralogy), E. J. Hill (botany); Ornithologist and taxidermist, Frank M. Woodruff; 1 museum aid, 2 office assistants, and 3 janitors, who also act as guards on Sundays, holidays, and other special occasions.

BOTANY. A general herbarium of about 10,000 specimens, mostly local.

GEOLOGY. Minerals, on exhibition, 1634, in storage, 9036; Rocks, on exhibition, 268, in storage, 297; Dynamic geology, relief maps, models, etc., 125; Economic geology, 488. Economic exhibits are a feature of this department and special collections of this sort include gems and gem minerals, iron and steel, asbestos, aluminum, carborundum, radium and radio-activity.

PALEONTOLOGY. Invertebrates, on exhibition, 2000±, in storage, 18,700±, types and figured specimens, 200; Vertebrates, on exhibition, 50, in storage, 25, types and figured specimens, 1; Plants, on exhibition, 500, in storage, 1000±. These collections include a nearly complete collection of Niagara fossils from the Chicago region, containing about 30 type specimens; a mounted skeleton of *Elephas columbi*, partly restored; the Dr. John H. Britts Missouri coal plants, part of the basis for monograph 37, United States Geological Survey; the William C. Egan Chicago and Mississippi Valley collection, containing types of Weller and Miller.

ZOÖLOGY. Shells, on exhibition, 12,691, in storage, 147,000±, types and figured specimens, 2500±; Insects, on exhibition, 4000±, in storage, 30,000±, types and figured specimens, 2; Other invertebrates, on exhibition, 1000±, in storage, 2000±, types and figured specimens, 1; Fishes, 147; Batrachians, on exhibition, 23, in storage, 150; Reptiles, on exhibition, 80, in storage, 305; Birds, on exhibition, 900, in storage, 4100±; Mammals, on exhibition, 147, in storage, 232; Eggs and nests, on exhibition, 100, in storage, 2500±. These exhibits include extensive local collections of mollusks, birds, fossils, and minerals. The exhibit of economic mollusks includes 800 specimens. 50 small and 7 large groups of animals are exhibited in natural surroundings.

SCHOOL LOAN COLLECTIONS. Birds, 18 collections, comprising about 100 specimens, and about 300 lantern slides; Mammals, 1 collection of 6 specimens; Fishes, 1 collection of 4 specimens; Mollusks, 300; Insects, 50; Microscopic sections of Illinois shrubs and trees, 300; Industries, 10 collections comprising about 200 specimens. The collections are arranged in sets in wooden transportation boxes of varying sizes.

Historical Sketch. Organized in 1857, incorporated in 1859, charter secured by the state legislature in 1865. A small museum was first started in a room on the corner of Clarke and Lake Streets. In 1864, more commodious quarters were secured in the Metropolitan block. Two years later the exhibits were seriously damaged by fire, and in 1868 a fireproof museum building was erected at 265 Wabash Avenue. In 1871, the museum building, with its contents, was totally consumed in the conflagration which destroyed the greater portion of Chicago. It is estimated that not less than 300,000 specimens were stored in the building, many of them being priceless in value. The following notable collections were destroyed: The Bishoff and Western Union Telegraph Expedition Alaskan material; the Smithsonian collection of crustacea, 10,000 jars containing types of Dana, Stimpson, and others; the invertebrates of the United States North Pacific Exploring Expedition, containing many undescribed types; the Stimpson collection of marine shells, numbering about 8000 specimens; and the United States Coast Survey collection of deep sea crustacea and mollusks, dredged in the Gulf Stream by M. Pourtales, and loaned for description. In addition, the library, the manuscripts of Dr. Stimpson, and almost the entire edition of the early transactions were destroyed. A new set of buildings was promptly erected on the burned site, and the lenders of the funds were secured by a mortgage on the property. The financial depression following the year 1873 reduced the income of the academy to such an extent that it was not able to meet its obligations, and in 1886 the property was transferred to the holder of the mortgage. Until 1892 the collections were provided with exhibition and storage rooms at the Inter-state Exposition, but when that building was taken down the collections were placed in storage until the present building was erected in Lincoln Park and opened to the public on October 31, 1894.

Financial Support. The museum possessed the following sources of income in 1909: from endowment, $6000; city, $5000 (this amount is paid annually and is fixed by mutual contract with the park board); membership, $400; sale of publications, etc., $60. In addition to the annual income, amounts varying from a few dollars to $5000 have been donated at various times for specific purposes. The park commissioners heat, light, and clean the building without expense to the academy.

Building. Erected in 1893 at a cost of $100,000, of which $75,000 was the gift of Matthew Laflin, and $25,000 the gift of the commissioners of Lincoln Park, who also provided the site for the building. About 12,530 square feet of floor space is available for exhibition purposes, and 10,540 for offices, workrooms, etc.

Administration. By a curator-in-charge, who is responsible to a board of trustees.

Scope. The efforts of the academy are especially directed toward an exposition of the natural resources of Illinois and the adjoining portions of the Mississippi Valley. The material gathered by the natural history survey of the academy, organized in 1892, is a notable feature of the local collections. As aids to the instruction of the general public, there are exhibits illustrating the home life and habits of animals, and the economic uses of natural materials; also the employment of numerous descriptive labels, pictures, and models; and the giving of courses of popular lectures. Public school work is aided by loan collections of specimens and slides, by lectures to school children, and by instruction of school teachers. Exploration and research are carried on by the staff, the present subject of investigation being fresh-water and post-glacial mollusca, deep-well borings of Chicago, flora of the Chicago region, and paleontology of the Niagara limestone.

Library. 29,778 books and pamphlets of a general scientific character, intended for use of the staff and members of the academy. The public may consult the library under certain restrictions.

Publications. (1) Early Proceedings, 1 volume issued. (2) Transactions, 2 volumes issued. (3) Bulletins, 3 volumes issued. (4) Bulletins of the Natural History Survey, 7 volumes issued.

Attendance. Open free to the public on week-days from 9 to 5 and on Sundays from 1 to 5. The attendance for the year 1909 was over 300,000. It is noteworthy that the academy is said to hold third place in this respect, its museum attendance being exceeded only by the American Museum of Natural History in New York and by the United States National Museum in Washington.

CHICAGO HISTORICAL SOCIETY. (Dearborn Avenue and Ontario Street.)

This society maintains a historical collection including relics of the mound builders and Indians; portraits of discoverers and explorers of the Mississippi Valley and the "Old Northwest" territory, Indian chiefs, pioneers, state governors, early residents of Chicago, and members of the society; historical models; paintings, prints, and photographic views of historic sites; and miscellaneous relics of local interest. This museum was founded at the time of the organization of the society in 1856, with the object of illustrating as fully as possible the subjects of which the library treats. Much discrimination has been exercised in the selection of objects for exhibition, and they are extensively used by archeologists and by study classes from the schools.

The museum occupies about 1234 square feet of floor space in the society's building, is in charge of the librarian, who is responsible to a committee on collections, and shares with the library and lectures a maintenance fund of approximately $14,000 annually, obtained from endowment and membership fees. A library of 150,000 volumes, pamphlets, and manuscripts on the history of the central west is accessible to the public in connection with the collections. The annual report of the museum is included in the year book of the society. The museum is open free to the public on every week-day.

CHICAGO SCHOOL OF CIVICS AND PHILANTHROPY. Social Museum. (35 Dearborn Street.)

This museum was incorporated in November, 1904, as the Municipal Museum of Chicago, and opened to the public in February, 1905, in two large rooms of the Chicago Public Library. The collections include exhibits in the form of maps, models, photographs, designs, charts, stereoscopic views, etc., illustrating foreign and American cities, and a civic reference library of some 600 titles. In the department of geography, a series of 200 maps, charts, and diagrams, and 200 photographs, illustrate the geography of the Chicago region and the industries which grow out of it. A valuable group of industrial material includes the Essen exhibit of workingmen's dwellings and factory hygiene, plans of municipal workingmen's houses presented by the city of Liverpool, and maps, plans, photographs, and graphic statistics from Munich, Dresden, Cologne, London, Manchester, Boston, and Chicago.

During the first two years of its existence the museum presented 11 exhibitions in city-making, entertained 84 conferences for discussions of public questions, gave more than 500 free illustrated addresses, and also acted as a bureau of civic information. The average daily attendance was 400–500, and on program days it amounted to 1500–2000.

Changes at the library forced the removal of the museum and it is now stored at Hull House and the University of Chicago. In 1909, ownership of the museum was transferred to the Chicago School of

Civics and Philanthropy, and present plans for its use include the utilization of the material for recurrent public civic exhibitions and for loan exhibitions, controlling the material in storage by means of indices at the school.

COUNCIL FOR LIBRARY AND MUSEUM EXTENSION.

A conference, organized in November, 1909, by the leading libraries and museums of Chicago as a basis for systematic and comprehensive coöperative effort on the part of these institutions to extend their facilities to the largest possible number of people in the entire community. The council is now engaged in furthering plans for issuing a handbook to the educational and recreational resources of Chicago. This is to be prepared in newspaper style and it is hoped that a quarter of a million copies may be issued for free distribution through various agencies in the city. The council meets at the Chicago Public Library on the second Friday of each month.

FIELD MUSEUM OF NATURAL HISTORY.

STAFF. Director, Frederick J. V. Skiff; Curators, George A. Dorsey (anthropology), Charles F. Millspaugh (botany), Oliver C. Farrington (geology), Charles B. Cory (zoölogy); Assistant curators, S. C. Simms, Berthold Laufer, and Albert B. Lewis (ethnology), Charles L. Owen (archeology), Jesse M. Greenman (botany), Henry W. Nichols (geology), Elmer S. Riggs and Arthur W. Slocum (paleontology), Seth E. Meek, William J. Gerhard, Edward M. Gueret, and Wilfred H. Osgood (zoölogy); Modelers, C. A. Gardner (anthropology), B. E. Dahlgren (botany); Preparators, O. E. Lansing, Jr., H. H. Smith, R. A. Dixon, and W. H. Beardsley (botany), J. B. Abbott and C. T. Kline (geology), S. F. Hildebrand, William Buettner, A. B. Walcott, and A. W. Henn (zoölogy); Preparator and artist, J. A. Burt (anthropology); Preparator and field assistant, Fay C. Cole (anthropology); Taxidermists, Leon L. Pray, Julius Freisser, William Heim, and Philip Heim (zoölogy); Recorder, D. C. Davies; Assistant recorder, B. Bridge; Librarian, Elsie Lippincott; Assistant librarian, E. M. Wilcoxson.

ANTHROPOLOGY. Uncivilized peoples: Archeology, native, 65,712, foreign, 665; Ethnology, native, 24,778, foreign, 35,720. Civilized peoples, ancient, 24,539, modern, 5756; Life-size ethnological groups, 10; Miniature ethnological groups, 7; Models, without human figures, 11.

The more notable collections in ethnology are: The Stanley McCormick Hopi material; Edward E. Ayer collection of North American Indian material; Robert F. Cummings Philippine material; Mrs. T. B. Blackstone collection from China and Thibet; Joseph N. Field

German New Guinea collection; R. Parkinson German New Guinea collection; G. F. Emmons collection from Alaska; H. N. Higinbotham collection from Korea; Hassler collection of feather work, etc., from Indians of Paraguay; Remenyi collection from South Africa; Pogoski collection from Siberia; various collections from the northwest coast of North America, and from California.

The more notable collections in archeology are: The Montez, Harris, and Dorsey Peruvian collections; United States Colombian collection of gold, earthenware, and stone; Allison V. Armour collection of Mexican antiquities; Martin A. Ryerson collection of Swiss Lake material; Johnson collection of reproductions of Irish antiquities; originals and reproductions of ancient Italian bronzes; Cyrus H. McCormick collection from Chile; material from Hopewell Group of Mounds, Ohio; Charnay casts of Central American sculpture; Wyman collection of copper implements; Zavaleta collection of Argentine archeology; Riggs collection from the southern states; and various collections from Egypt.

BOTANY. A herbarium of 300,000 phanerogams and ferns, including 2500± types and figured specimens; a small herbarium of cryptogams; and economic collections which are said to be the most complete and important in the country. Among special collections may be mentioned the herbarium of Dr. Arthur Schott, including plants from the Isthmus of Darien and the United States boundary survey, and his Yucatan and Hungarian series; the M. S. Bebb collection, comprising the largest representation of the genus *Salix* in this country; the Harry N. Patterson collection, with its complete representation of the plants of Gray's 'Manual' and its full sets of Curtiss, Pringle, Cusick, Chapman, Hall and Harbour; the H. J. Wahlstedt collection, comprising his very complete series of *Chara*, *Viola*, *Epilobium*, and Scandinavian plants; the Dr. J. T. Rothrock collection, rich in the plants of the early surveys west of the Mississippi; the Charles F. Millspaugh collection, particularly valuable for the complete and type-compared representation of the genus *Euphorbia*; and the Arthur A. Heller collection. It also contains the Gaumer Yucatan plants and the plants of the two Allison V. Armour expeditions. The dendrology collection represents a large number of countries in all parts of the world.

GEOLOGY. Minerals, on exhibition, 6500, in storage, 9500; Rocks, on exhibition, 1000, in storage, 1600; Dynamic geology, relief maps, models, etc., on exhibition, 2400, in storage, 500; Meteorites, 500; Economic geology, on exhibition, 10,000, in storage, 5000. The economic series is one of the largest in the world, especially notable for the size of the specimens and the number of foreign localities represented. Special mention may be made of the Higinbotham collection of gems and gem minerals, one of the most valuable in the world; the Chalmers crystal collection; the collection of meteorites, containing specimens of 300 falls with notable ones from Long Island, Brenham, Canyon Diablo and Tonopah; reproductions of limestone and gypsum caves; a model of the moon, 19 feet in diameter; and 200 specimens of polished slabs illustrating different ornamental stones, chiefly marbles and granites.

PALEONTOLOGY. Invertebrates, on exhibition, 27,000, in storage, 31,000, types and figured specimens, 53; Vertebrates, on exhibition, 650, in storage, 500, types and figured specimens, 11; Plants, on exhibition, 470, in storage, 550. These collections are installed as a division of geology and classified stratigraphically. They include mounted skeletons and restorations of many of the larger reptiles and mammals.

ZOÖLOGY. Shells, on exhibition, 20,000±, in storage, 15,000±; Insects, on exhibition, 3660, in storage, 100,000±, types, 425; Other invertebrates, on exhibition, 1200±, in storage, 4000±; Fishes, on exhibition, 1021, in storage, 36,950, types, 73; Batrachians, on exhibition, 79, in storage, 1946, types, 3; Reptiles, on exhibition, 119, in storage, 3475, types, 4; Birds, on exhibition, 2000, in storage, 45,000±, types, 85; Mammals, on exhibition, 710, in storage, 16,000, types, 108; Bird eggs, on exhibition, 1183, in storage, 10,000±; Skeletons, on exhibition, 206, in storage, 210; Skulls, 214; Casts and glass models, 275. There are 21 large, and 18 small, groups of birds and small mammals and 68 groups of fishes exhibited in natural surroundings. Notable among the collections are the C. B. Cory collection of birds from North America and the West Indies; the collection from East Africa, made by the museum's East African expedition; and a collection of North and Central American bird skins.

HISTORICAL SKETCH. Established in 1894, at the close of the World's Columbian Exposition, by the gift of $1,000,000 from Marshall Field, who bequeathed the institution a further $8,000,000 at his death in 1906—$4,000,000 for the erection of a permanent building, and $4,000,000 for endowment. The nucleus of the exhibition material was gathered by gift and purchase at the exposition. Most of this material, however, has since been rearranged, readapted, or discarded.

FINANCIAL SUPPORT. Income from endowment of $4,000,000 from Marshall Field, and $1,200,000 donated by different individuals; and $35,000 from other sources. The citizens of Chicago have confirmed legislative provision for the levy of a tax for the maintenance of the museum when a new building shall have been erected, which it is estimated will eventually produce about $100,000 per annum.

Building. The museum now occupies the temporary building erected for fine arts in Jackson Park, the exposition site. This building covers nine acres and there is in connection with it a well-equipped printing shop, a large two-story taxidermy section, illustration studios, assaying and lapidary rooms, etc. Plans have been drawn for the erection of a permanent building to cost $4,000,000, made possible by the Marshall Field bequest.

Administration. By a director, responsible to a board of trustees. The entire museum records, accession system, historical files, publications, and supplies are in charge of a recorder.

Scope. The activities of the museum include expeditions to all parts of the world for the purpose of obtaining study, exhibition, and exchange material; investigations conducted by members of the staff, the results being published by the museum; the maintenance of study collections; and instruction of the general public, especially by free lectures.

Library. 50,000 books and pamphlets of a scientific character, designed for reference only, and intended primarily for the use of the staff. The public is admitted to the general reading room and books may be consulted upon application to the librarian.

Publications. Results of expeditions, investigations, and researches have been published from time to time.

Attendance. Open to the public daily (except Thanksgiving and Christmas) from 9 to 4, except Saturdays and Sundays during June, July, and August, when the hour of closing is 5.30. Admission is free Saturdays and Sundays. On other days an entrance fee of 25 cents is charged, children under 12, 10 cents. Teachers and scholars are admitted free at all times. The attendance for the year ending September 30, 1908, was 218,682.

UNIVERSITY OF CHICAGO. Educational Museum.

Staff. Curator, I. B. Meyers; Assistant curator, Wade McNutt.

Anthropology. Dress and implements of North American Indians, 100 pieces; Indian pottery, ancient and modern, 25 pieces; Pottery, glass, etc., from the Isle of Cyprus, 200 pieces; Models of primitive Philippine implements, 15 pieces; Textiles and pottery from ancient Egypt, 30 pieces; Costumes (modern) of foreign peoples, 100 pieces.

Botany. Models of flowers, 50; Economic botany, including commercial cereals, fibers, food plants, etc., 300 specimens.

Geology. Minerals, on exhibition, 450, in storage, 800; Rocks, on exhibition, 250, in storage, 1000; Dynamic geology, on exhibition, 150, in storage, 600; Economic geology, 300.

Paleontology. Invertebrates, on exhibition, 300, in storage, 500; Plants, on exhibition, 250, in storage, 300.

Zoölogy. Shells, on exhibition, 250, in storage, 900; Insects, on exhibition, 500, in storage, 1500; Other invertebrates, chiefly coral, 200; Fishes, 15; Batrachians, 6; Reptiles, 14; Birds, on exhibition, 200, in storage, 350; Mammals, on exhibition, 40, in storage, 20; Bird eggs, 225; Skeletons, 25. There are 25 small groups illustrating the life-history and homes of animals.

Historical Sketch. Established in 1900. A considerable portion of the material is collected by students in visits to commercial and industrial centers, and in field study; the remainder is acquired by purchase and gift.

Financial Support. General university funds.

Administration. By a curator, who is responsible to the director of the school of education.

Scope. The primary purpose of this museum is to formulate the relation of materials to practical teaching in elementary and secondary school work and to instruct students and student teachers in a more intelligent use of the larger private, municipal, state, and national museums, in their relation to public education.

Students collect the material, and the working up of a well-selected, well-arranged collection is placed on the same basis as any other type of school work. Limited instruction is given to student teachers in collecting and arranging materials for the building up of local school museums. All materials, except when exceedingly fragile or rare, are circulated in the classrooms.

Attendance. Open free to the public during school days and hours.

UNIVERSITY OF CHICAGO. Haskell Oriental Museum.

Staff. Director, James Henry Breasted; Assistant director, Edgar J. Goodspeed; Curators, James Henry Breasted (Egypt), Ira M. Price (Assyro-Babylonia), E. G. Hirsch (Syria-Palestine); 1 assistant and stenographer, and 1 janitor.

Oriental Archeology. About 10,000 specimens in Egyptian, Assyrian, Babylonian, and Palestinian archeology. The Egyptian collection embraces 9000 numbers, including sculpture, painting, inscriptions, and miscellaneous products of the arts and crafts in metal, wood, ivory, stone, fayence, clay, textiles, etc. Among the documents are papyri and ostraka. The Assyro-Babylonian collection embraces 1000 numbers, including clay tablets and various products of the craftsman. The Palestinian collection is chiefly educational. A loan collection belonging to Dr. Edmund Buckley well covers Japanese Buddhism and Shinto. The museum possesses several valuable Pali manuscripts, and a series of East Indian paintings.

Historical Sketch. The collections were begun by the present director, who spent the winter of 1894–5 in Egypt laying the foundation of the Egyptian collection. Since then the museum has been in almost constant connection with some research enterprise in the field of the hither Orient. With the organization of the Oriental Exploration Fund of the University of Chicago, the Assyro-Babylonian collection has also received valuable accessions.

Financial Support. The museum shares the general budget of the university. The collections are largely due to private subscriptions from members of the Chicago Society of Egyptian Research and from subscribers to the Egypt Exploration Fund. The finds of the Oriental Exploration Fund, which has an income of $10,000 a year, are presented to the museum.

Building. Erected in 1895–6, at a cost of $100,000, the gift of Mrs. Caroline E. Haskell.

Administration. By a director, responsible to the University of Chicago board of museums.

Scope. The chief purpose of the museum is research and exploration, but the collections are used also for teaching purposes in the university.

Library. Over 18,000 volumes, devoted chiefly to history, archeology, philology, paleogeography, and theology, and used by members of the staff and students of the university.

Publications. The reports of field work (Oriental Exploration Fund) appear in the "American Journal of Semitic Languages."

Attendance. Open free to the public.

UNIVERSITY OF CHICAGO. Walker Museum.

Staff. Director, T. C. Chamberlin; Curators, R. D. Salisbury (geography and geology), S. W. Williston (vertebrate paleontology), Stuart Weller (invertebrate paleontology), W. H. Emmons (economic geology and mineralogy), Frederick Starr (anthropology); Associate curator, W. F. E. Gurley (paleontology); Assistant curator, Paul Miller (vertebrate paleontology).

Anthropology. General collections in archeology and ethnology, 400,000 specimens, including the following loan collections: Ryerson collection in Mexican archeology, 3000 pieces; Ryerson collections from the cliff dwellings and cave houses of Utah, accompanied by a series of photographs; Clement collection from Japan, containing art work in lacquer and porcelain, and an interesting series of articles used in the curious doll's festival. The material collected by Frederick Starr among the Ainu of Japan and the native tribes of the Congo Free State is on display temporarily.

GEOLOGY. General collections illustrating structural phenomena and the modes of action of dynamic agencies; a systematic series of fossils arranged on a stratigraphic basis illustrating the successive faunas and floras; a large series of models, maps, and photographs; a large series of ores and other mining products, representing the leading mining districts of the United States and of many foreign countries; a systematic series of minerals arranged for the illustration of lectures; igneous, sedimentary, and metamorphic rocks in systematic series, together with special collections of igneous rocks from a number of localities in western America and Europe. The private mineral collection of Mr. W. C. E. Seeboeck is also on exhibition.

PALEONTOLOGY. Invertebrates, arranged for reference purposes only, rich in material from the paleozoic horizons, including about 3500 type specimens. Important collections are the James Hall collection, the Gurley collection, the James collection, the Washburn collection, the Weller collection, the Sampson collection, the Faber collection, the Haines collection, the Basseler collection of Bryozoa and Ostracoda, and the Van Horne collection.

Vertebrate fossils include important series of the American Permian reptiles, triassic reptiles and amphibians, Niobrara cretaceous birds, reptiles, and fishes, with considerable material from the Laramie cretaceous and White River oligocene.

HISTORICAL SKETCH. The museum was established by Mr. Geo. C. Walker of Chicago, in 1893.

FINANCIAL SUPPORT. Maintained by funds supplied by the trustees of the university.

BUILDING. Erected in 1893, at a cost of $130,000, by the founder. There is 15,600 square feet of floor space available for exhibition, and 5200 for storage. About half of the building is temporarily occupied by other departments of the university, but will ultimately be available for the museum.

ADMINISTRATION. By a director, responsible to the University of Chicago board of museums.

SCOPE. The collections are intended chiefly for the purposes of investigation and college teaching.

Publications. Contributions from the Walker Museum, 7 numbers of the first volume issued. These are reprints of paleontological papers published in the "Journal of Geology."

Attendance. Open free to the public on week-days. No statistics of attendance, which is confined chiefly to students of the university.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 20 acres, established in 1868, containing 15 reptiles, 643 birds, and 436 mammals.

DECATUR:

JAMES MILLIKEN UNIVERSITY—DECATUR COLLEGE.

The college has a small art museum used primarily for teaching purposes in the School of Applied and Fine Arts. It also has a biological and geological collection of about 3000 specimens in connection with the School of Liberal Arts; and small museums in connection with the departments of domestic science and art, engineering, and commerce and finance.

ELGIN:

ELGIN SCIENTIFIC SOCIETY.

The secretary reports that the society maintains a museum, but no reply has been received to repeated requests for further information regarding the collections, which are said by Merrill to consist principally of local geological specimens, with a limited amount from Colorado, California, and elsewhere, and a collection of shells and corals.

EVANSTON:

EVANSTON HISTORICAL SOCIETY.

The society maintains in connection with its library of 2000 books and pamphlets dealing with local and northwestern history, a collection of historical relics, maps, charts, pictures, photographs, etc., which is housed in the society's rooms in the public library building, and is open to the public during library hours, from 9 to 9.

NORTHWESTERN UNIVERSITY—COLLEGE OF LIBERAL ARTS.

The college has a museum which was said by a former curator to contain 3000 fossils; 22,000 minerals and rocks; 28,000 specimens in zoölogy, including 3000 birds, 700 reptiles and batrachians, 900 fishes and 18,000 shells; a herbarium of 20,000 specimens; and 8000 specimens, in ethnology. The present curator, Dr. U. S. Grant, reports that most of this material is in storage and that no details are at present available.

NORTHWESTERN UNIVERSITY—GARRETT BIBLICAL INSTITUTE. Bennett Museum of Christian Archeology.

Staff. The museum is in charge of Alfred Emerson, acting director, with the coöperation of the authorities of the institute.

Collections. The collections include the following original antiquities of the early Christian period; 9 fragments of marble relief sculptures; 19 inscriptions on marble, and fragments; 15 terra cotta lamps; 1 lead sling shot of the 1st century B. C.; 80 intaglios and coins, gold, silver, and bronze. There are 94 facsimile and other plaster casts, partly pagan and partly Christian, including a large prototype reproduction of the St. Hippolytus, and of 2 fine sculptured sarcophagi at the Lateran Museum, Rome. There are 4 plastic models of Greek, Roman, and Frankish soldiers; 4 colored plaster architectural models and 1 of colored wood; 4 wooden and 19 terra cotta models of utensils; 8 models of military weapons and costumes, of metal, cloth, leather, etc.; 10 electrotype copies of antique jewels, altar plate, and a classical frieze; 3 topographical models of Palestine, Acropolis, and Rome; 1 triumphal quadriga of Emperor Constantine, one-quarter life, original composition; and 300± mounted photographs.

Historical Sketch. The museum is the result of an anonymous gift of $10,000 made in memory of the late Charles E. Bennett, a former professor in the institute, and of his great interest in early Christian antiquities and archeology.

Building. The museum occupies a well-lighted hall, affording about 2000 square feet of floor space, and part of the second-story stairway of the fireproof memorial building of the institute, on the grounds of Northwestern University. The hall is elaborately decorated, by graduates of the Art Institute of Chicago, working under Dr. Emerson's direction, with a series of 44 mural and ceiling compositions, re-enlarged and adapted from Monsignore Wilpert's colored reproductions of the Roman catacomb frescos. The subjects selected extend from the 2nd to the 4th century, A. D.

Scope. The museum confines its work almost exclusively to early Christian archeology. It desires to coöperate with other museums in placing duplicate and multiple orders for difficult plastic reproductions abroad.

Library. A beginning of an archeological library has been made.

ATTENDANCE. Open free to the public, upon application to the librarian, on week-days from 8 to 12 and 2 to 6, except Monday morning and Saturday afternoon.

Northwestern University also has a small collection of ceramics and art in charge of the University Guild; and museum collections in connection with the Medical School, the School of Pharmacy, and the Dental School, in Chicago.

SWEDISH HISTORICAL SOCIETY OF AMERICA. (Orrington Avenue and Lincoln Street.)

The society has a small historical collection as the nucleus of a museum.

GALESBURG:

KNOX COLLEGE. Hurd Museum.

STAFF. Curator, H. V. Neal, who is also professor of biology.

ANTHROPOLOGY. Archeology, foreign, 200; Ethnology, foreign, 250.

ART. Sculpture, 6; Prints and engravings, 1500; Oil paintings, 6.

BOTANY. A herbarium containing 5000 phanerogams and 500 cryptogams.

GEOLOGY. Minerals, 7000; Rocks, 3000.

PALEONTOLOGY. Invertebrates, 4000; Vertebrates, 25; Plants, 300.

ZOÖLOGY. Shells, 6000; Insects, 5000; Other invertebrates, 1000; Fishes, 200; Batrachians, 50; Reptiles, 25; Birds, 600; Mammals, 100.

HISTORICAL SKETCH. The Hurd Museum was begun as a private collection by Albert S. Hurd, professor of natural science in Knox College, and was bequeathed to the college at his death.

FINANCIAL SUPPORT. Occasional gifts from friends of the college.

BUILDING. The museum occupies a room in the main college building.

ADMINISTRATION. By a curator, responsible to the trustees of the college.

SCOPE. Used chiefly for teaching purposes.

ATTENDANCE. Open occasionally to the public.

JOLIET:

JOLIET TOWNSHIP HIGH SCHOOL.

The school maintains a natural history museum rich in local material, especially fungi, cretaceous and other fossils, land shells, seeds and fruits. The collections are in charge of Willard N. Clute, curator and head of the department of biology, and Louise M. Hird, assistant, and occupy about 1500 square feet of floor space for exhibition in the school building. For lack of space only about half of the collections are on view at any one time, but the exhibits are changed frequently. The museum is intended primarily for the use of pupils in the school but is open free to the public during school days.

LAKE FOREST:

LAKE FOREST COLLEGE.

The college possesses a very good collection of local birds, and small collections in geology, including a good set of the Guelph group of Niagara fossils from Port Byron, Illinois, and a collection of the Mazon Creek, Illinois, ferns.

LINCOLN:

JAMES MILLIKEN UNIVERSITY—LINCOLN COLLEGE.

The college has a museum not exceeding 500 or 600 specimens.

NAPERVILLE:

NORTHWESTERN COLLEGE.

The college has general collections in charge of L. M. Umbach, curator, and including anthropology, geology, paleontology, and zoölogy, with especially extensive collections in botany, including a herbarium of about 35,000 plants, chiefly American. The museum occupies about 2800 square feet of floor space on the upper floor of the main college building and is supported from the general funds of the college. It is open free to the public on Fridays but no statistics of attendance are available.

PEORIA:

ZOÖLOGICAL PARK.

This park, occupying 1 acre, was established in 1900 and contains 2 reptiles and 28 mammals.

ROCK ISLAND:

AUGUSTANA COLLEGE. Museum.

The museum comprises several distinct collections as follows, About 5000 specimens in zoölogy, collected chiefly by Dr. Josua Lindahl: a notable feature being a fairly complete collection of land and fresh-water shells from Sweden; a herbarium of over 2000 specimens, the nucleus being formed by a collection of plants from Sweden, donated by Dr. A. R. Cervin; about 10,000 specimens in geology and paleontology, including the McMaster collection of local geology and material collected by the present curator. The museum is intended for teaching purposes in the college, and is in charge of J. A. Udden, curator.

SPRINGFIELD:

ILLINOIS STATE HISTORICAL LIBRARY AND SOCIETY.

A collection of articles of local historical interest is maintained in connection with the library, the Lincolniana being the most important material. The library and collection occupy a part of the third floor of the capitol and are open free to the public on week-days, except legal holidays, from 9 to 5.

STATE MUSEUM OF NATURAL HISTORY.

STAFF. Curator, A. R. Crook; Assistant curator, Fannie Fisher; 1 janitor.

ANTHROPOLOGY. Archeology, native, 1850 specimens.

BOTANY. A herbarium of about 2000 sheets.

COMMERCE AND INDUSTRY. Collections of building stones, clays, soils, and other products are in process of preparation.

GEOLOGY. Minerals, on exhibition, 500, in storage, 1000; Rocks, on exhibition, 2000, in storage, 500; Dynamic geology, relief maps, models, etc., 100. These collections comprise chiefly Illinois material.

PALEONTOLOGY. Invertebrates, on exhibition, 12,000, in storage, 25,000, types, 600; Vertebrates, on exhibition, 3150; Plants, on exhibition, 600, in storage, 2000. More than 4000 species of the invertebrates are described and of these fully 3000 are figured. Many vertebrates are described and figured. Much of the material was collected during the geological survey of the state.

ZOÖLOGY. Shells, on exhibition, 2818, in storage, 400; Insects, 4394; Fishes, 40; Batrachians, 10; Reptiles, 46; Birds, 575; Mammals, 65; Bird eggs, 969, nests, 81. 1 large and 2 small groups of animals are exhibited in natural surroundings.

HISTORICAL SKETCH. Established in 1851 as a part of the state geological survey. In 1877, the survey having been discontinued, the State Historical Library and Natural History Museum was created with A. H. Worthen as curator. In 1889 the library and museum became separate institutions.

FINANCIAL SUPPORT. By optional appropriations from the state, amounting to $6450 per annum for the past ten years.

Building. About 6000 square feet of floor space for exhibition, and 2000 for offices and workrooms, is occupied by the museum in the state arsenal building.

Administration. By a curator, responsible to a board of trustees, consisting of the governor, the secretary of state, and the superintendent of public instruction.

Scope. The maintenance of local collections, instruction of the general public, and research are the chief purposes of the museum. Popular lecture courses are given and arrangements are being made for other activities, such as the distribution of specimens to high schools, etc.

Library. 4000 bound volumes and 1000 pamphlets on geology and general natural history, intended primarily for use of the staff but accessible to the public.

Publications. (1) First Geological Survey of Illinois, 1857. (2) Geological Survey of Illinois, 8 volumes issued from 1866 to 1890. (3) Economic Geology of Illinois, 3 volumes issued, 1882. (4) Bulletins, 12 issued from 1882 to 1897. (5) 1 Circular and 1 Report of Historical Library and Natural History Museum, 1889. (6) Reports, 3 issued, 1902, 1907, 1908. (7) History of Illinois State Museum of Natural History, 1907.

Attendance. Open free to the public on week-days, except holidays, from 9 to 5. An annual attendance of about 30,000.

STERLING:

WHITESIDE COUNTY HISTORICAL SOCIETY.

The society possesses collections including minerals, labeled but not classified; shells; reptiles; birds; historical relics and portraits; prints and engravings of local interest. These are housed in the society's rooms in the city hall and are constantly receiving accessions by gift.

URBANA:

UNIVERSITY OF ILLINOIS.

The university maintains museum collections in connection with its various departments as enumerated below. The natural history collections have been recently brought together in a new building where they occupy a room affording 2820 square feet of floor space with various halls and corridors also available for exhibition. In 1909 a curator was appointed for the first time and this department is now in charge of Frank Smith, curator, and S. Fred Prince, assistant. The natural history museum is supported by an annual state appropriation of $2000, supplemented for 1910 by a university appropriation of $4000 to cover cost of moving and installation. This museum is open free to the public on week-days from 7 to 6.

Agriculture. The agricultural departments maintain collections illustrating their work, prominent among which are those showing typical specimens of standard varieties of corn; wax models of fruits and vegetables; an extensive horticultural herbarium; specimens of live stock; a collection of farm machinery; and material illustrating the progress of investigations.

Art. The University Art Gallery is the gift of citizens of Champaign and Urbana and is devoted primarily to a collection of models for art students. It comprises 13 full-size casts of celebrated statues, 40 statues of reduced size, and a large number of busts and bas-reliefs making in all over 400 pieces. There are also hundreds of large autotypes, photographs, and fine engravings, representing many of the great masterpieces of painting of nearly all the modern schools; and a gallery of historical portraits, mostly large French lithographs, copied from the national portrait galleries of France. There are also a number of casts of ornaments from the Alhambra and other Spanish buildings presented by the Spanish government; a set of casts illustrating German renaissance ornament; a series of art works from the Columbian Exposition; and miscellaneous casts, models, prints, and drawings.

Botany. A herbarium of about 65,000 mounted plants, including a practically complete series of the indigenous flowering plants of Illinois, a fair representation of the flora of North America, and a considerable collection of foreign species. There are about 32,000 named specimens of fungi.

Commerce and Industry. A general working collection given by the Philadelphia Commercial Museums.

Engineering. Extensive teaching collections, including specimens of material; samples, casts, and drawings of construction; lantern slides, books, and pamphlets; etc., are housed in various rooms in Engineering Hall.

Geology. A synoptic collection of 9000 specimens of rocks; 1000 thin sections of rocks and minerals; a series of ornamental building stones; a stratigraphic collection to illustrate Illinois geology; and a collection of 104 samples of Illinois soils. The mineral collection includes over 12,000 minerals, ores, etc.; 575 crystal models; and a considerable collection of gems and precious stones.

Library Economy. An exhibit of library methods and administration prepared by the library school.

Paleontology. 49,000 representative fossils, including the A. H. Worthen collection with 742 type specimens; the Tyler, McWhorter, and Hertzer collections; the greater part of the collections made by the geological survey of the state under Worthen; 200 thin sections of corals; the Ward collection of casts; and a number of special collections representing the fauna and flora of particular groups.

Pedagogy. Illustrative material from manual training departments of various schools; photographs of school buildings; drawings and constructive work by public school pupils; and the nucleus of a representative collection of apparatus for the school laboratory. This collection is in University Hall.

Zoölogy. Shells, 2000± species; Insects, the Bolter collection of 120,000 specimens, representing over 16,000 species; Other invertebrates, many alcoholics, large series of Blaschka models, etc.; Fishes, about 300 species in alcohol, and 75 casts; Batrachians and reptiles, not enumerated; Birds, practically complete series of Illinois species, and about 125 foreign species; Mammals, a series of ruminants of the United States, with representatives of other orders.

INDIANA

BLOOMINGTON:

INDIANA UNIVERSITY.

No reply has been received to repeated requests for information regarding the teaching collections of the university. The university catalog shows that there is no general museum and that the most important of the departmental collections are the Eigenmann collection of several thousand species of fishes and a collection of unworked paleontological material especially rich in young stages of brachiopods and bryozoans.

CENTERVILLE:

WAYNE COUNTY HISTORICAL SOCIETY.

The secretary reports that a museum is maintained in charge of Caleb King, curator. No reply has been received to repeated requests for further information.

CRAWFORDSVILLE:

WABASH COLLEGE. Hovey Museum.

Staff. Curator, Mason D. Thomas.

Anthropology. 6000 specimens, chiefly relics of American Indians and the mound builders.

Botany. A herbarium containing 30,000 phanerogams and 1500 cryptogams, especially complete in North American species; 1000 specimens of economic products.

Geology. Minerals, 2000; Rocks, 1000; Economic series, 400 specimens, including a valuable series of marbles and granites, and a series of iron ores with their furnace products.

Paleontology. 4300 specimens; 300 casts of fossil vertebrates (chiefly from Ward); 300 fossils from the coal measures; 500 crinoids, 200 trilobites, and 3000 corals, brachiopods, gastropods, cephalopods, etc., from the Keokuk group at Crawfordsville; fossil fishes from Persia; and a series of mammalian fossils from California.

The illustrative material is valuable and fairly representative. The series of fossils is carefully arranged to portray the development of life from early primordial times to the present. Some groups of devonian and sub-carboniferous forms are well represented, and have furnished types for various species of crinoids, etc., for which the beds in the near vicinity are famous.

Zoölogy. Shells, 1000; Insects, 1000; Other invertebrates, 300; Fishes, 50; Batrachians, 50; Reptiles, 25; Birds, 100; Mammals, 40.

Historical Sketch. The museum was established by Dr. H. Hovey, and maintained by private contributions for many years. Later purchases have been made by the college.

Financial Support. The museum receives $200 of the appropriation for the department of biology, and occasional gifts from other sources.

Administration. By a curator, responsible to the board of trustees of the college.

Scope. The collections are chiefly used for teaching purposes in the college.

Attendance. Open free to the public. No statistics of attendance are available.

CROWN POINT:

OLD SETTLERS AND HISTORICAL ASSOCIATION OF LAKE COUNTY.

This organization is said by Thwaites to maintain a small museum illustrating pioneer life and natural history.

FRANKLIN:

FRANKLIN COLLEGE. Gorby Collection.

This collection is used primarily for college teaching but is also accessible to visitors. It is carefully labeled and cataloged and occupies a large well-lighted room in the main building of the college. It is in charge of J. W. Adams, professor of geology, and includes about 300 arrowheads, axes, and other relics of American Indians, and 300 specimens from cliff dwellings; about 35,000 fossils, mostly silurian, devonian, or carboniferous; 2000 shells, several hundred echinoderms, 200 crustacea, about 800 bird eggs, etc.

GOSHEN:

ELKHART COUNTY HISTORICAL SOCIETY.

This society was organized in 1896 and occupies a room in the county court house, where it maintains a historical museum, including about 400 Indian stone implements; domestic and other implements and articles used by early settlers; documents, photographs, and local publications of early date relating to the county; a cabinet of curios from the Philippine Islands; mastodon tusks and elk antlers from Elkhart County; a collection of military relics and records; etc. There are no regular funds for the support of the museum, and the exhibition cases have been provided by the county.

The museum is open free to the public on week-days from 8 to 5.

HANOVER:

HANOVER COLLEGE.

No reply has been received from this institution, which is said by Merrill to have a teaching collection of 500 geological specimens, chiefly local.

INDIANAPOLIS:

ART ASSOCIATION OF INDIANAPOLIS. John Herron Art Institute.

The John Herron Art Institute comprises a fine arts museum and a school, each having its own building on grounds at Sixteenth and Pennsylvania Streets. It is conducted by the Art Association of Indianapolis, to which funds were bequeathed for the purpose by John Herron in 1896. These funds have since been increased by other endowment. Additional income is derived from annual dues of $10 each from about 500 members and by an appropriation of about $9000 annually from the school board of Indianapolis. The institute is administered by William Henry Fox, director, William Coughlen, secretary of the art association, and Anna E. Turrell, curator of the museum and school property.

Collections. The museum possesses a permanent collection of about 80 paintings; some casts; and a collection of miscellaneous art objects, including a valuable series of Chinese robes and embroidery. The active life of the institute dates from November 20, 1906, when the museum was opened to the public, and its acquisitions, aside from the painting collection, have been made mainly since that time. An art library was opened in 1909 containing about 300 books; periodicals on art subjects; about 400 prints, etchings, and engravings; 150 large Braun carbon photographs of masterpieces of art; a collection of miscellaneous photographs of art and architectural subjects; and a very good collection of catalogs of public and private collections, including those of the J. Pierpont Morgan collection of paintings and miniatures. The permanent collection of paintings is contemporary in character and is mainly of American art.

Building. The building, erected in 1906, has a frontage of 125 feet and a depth of 80 feet. It encloses three sides of a sculpture court and is constructed with a view to subsequent enlargement. The first floor has the administrative offices, the library, galleries for the display of objects in cases, and the sculpture court. On the second floor are top-lighted galleries for paintings. There are 11 of these galleries in all, of which the largest has a floor space of 2100 square feet.

Attendance. The museum is open on week-days from 9 to 5, on Sundays from 1 to 6, and Wednesday evenings from 7.30 to 10. An admission fee of 25 cents is charged on week-days and 10 cents on Sundays. Occasional free days are appointed by the directors.

INDIANA STATE MUSEUM.

This museum is housed in the state house, where it occupies a floor space of about 4200 square feet. It is devoted to the geology and natural history of the state, and the state geologist, W. S. Blatchley, acts as curator. The only assistant is a janitor or custodian, and there are no special funds for the maintenance of the museum. The collections are open free to the public daily, except holidays, from 8 to 5. The attendance is large but statistics are not available.

UNIVERSITY OF INDIANAPOLIS—BUTLER COLLEGE.

The college maintains teaching collections, including stone implements from the United States; fossils and minerals; land, fresh-water, and marine shells; invertebrates in alcohol (largely from New England); fresh-water and marine fishes; reptiles and amphibians. The collections occupy about 1800 square feet of floor space, and are in charge of H. L. Bruner, professor of zoölogy.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 6 acres, established in 1899, containing 14 birds and 61 mammals.

LAFAYETTE:

PURDUE UNIVERSITY.

The university maintains collections for teaching purposes in connection with its scientific departments as follows: Anthropology, 1000 specimens. Botany, 5000 phanerogams, 2000 cryptogams, 500 specimens of seeds and economic products. Engineering, a railway museum containing a number of historic locomotives and other material illustrating railway development in America. Geology and paleontology, 1000 minerals and 4000 fossils. Zoölogy, 13,000 specimens, including the Scheuch and other collections comprising about 6000 mollusks; the Scheuch collection of 6000 coleoptera; 500 fishes; the A. W. Butler collection of reptiles and batrachians of Indiana; and an almost complete series of birds and mammals of Indiana, numbering 500 specimens.

MARION:

GRANT COUNTY HISTORICAL SOCIETY.

The secretary reports that the society maintains a museum in connection with the library, but no further information has been received.

NEWCASTLE:

HENRY COUNTY HISTORICAL SOCIETY.

This society was organized in 1887. In 1901 it acquired its present building, in which about 1000 square feet of floor space is devoted to a museum and a historical library. The scope of the museum includes the aboriginal life, geology and mineralogy, natural history, history, and industries of Henry County and vicinity. The library at present contains 500–800 volumes.

NOBLESVILLE:

HAMILTON COUNTY HISTORICAL ASSOCIATION.

This association maintains a small collection of historical relics, etc., in a room in the county court house. The expense of maintaining the collections up to $50 per annum is borne by the county.

NOTRE DAME:

NOTRE DAME UNIVERSITY.

The university states that museum collections are maintained but has not replied to repeated requests for further information.

RICHMOND:

EARLHAM COLLEGE. The Joseph Moore Museum.

STAFF. Curator, Allen David Hole; 1 student assistant; several student attendants.

ANTHROPOLOGY. Uncivilized peoples: Archeology, native, 3200±, foreign, 200±; Ethnology, native, 100±, foreign, 100±. Civilized peoples, ancient, 50±, modern, 100±. The majority of the archeological specimens are arrowheads and stone implements from the Ohio-Mississippi Valley.

BOTANY. A herbarium containing 200± cryptogams and 100± phanerogams.

COMMERCE AND INDUSTRY. About 200 specimens, mostly models, illustrating the pioneer industries of the Ohio Valley.

GEOLOGY. Minerals, on exhibition, 2300±, in storage, 300±; Rocks, on exhibition, 1000±, in storage, 300±; 1 relief map; Fragments of the "Homestead" (Iowa), and the "Kiowa" (Kansas) meteorites.

PALEONTOLOGY. Invertebrates, on exhibition, 8000±, in storage, 2000±, type specimen of *Lepadocystis* (*Lepadocrinus*) *moorei* Meek; Vertebrates, 100±, type specimen, a mounted skeleton of *Castoroides ohioensis* Foster; Plants, 400±. There is a mounted skeleton of a mastodon.

ZOÖLOGY. Shells, on exhibition, 6000±, in storage, 1000±; Insects, 3000±; Other invertebrates, 1000±; Fishes, 200±; Batrachians, 100±; Reptiles, 100±; Birds, 1100±; Mammals, 200±.

HISTORICAL SKETCH. The beginning of the museum dates from the early days of the Friends' Boarding School (now Earlham College), founded in 1847; it at first consisted of a few fossils and minerals collected for the purpose of instruction in geology. The present development is largely due to the efforts of Professor Joseph Moore from 1853 to 1905. The office of curator of the museum was created in 1888, and Professor Moore was appointed to the place. A complete classified list of all specimens is now in preparation.

FINANCIAL SUPPORT. Chiefly by college funds, with occasional subscriptions from other sources.

BUILDING. The museum occupies rooms in a college building, having about 5500 square feet of floor space for exhibition, and about 1000 for offices, workrooms, etc.

ADMINISTRATION. By a curator, responsible to the board of trustees of the college.

SCOPE. The collections are intended chiefly for use by the college classes but some emphasis is placed upon instruction of the general public, attendants being present each day to give assistance in the examination of specimens, and classes from the public schools, in charge of their teachers, are made welcome at the museum.

LIBRARY. The library of the museum is merged with the library of the college.

ATTENDANCE. Open free to the public on week-days from 8 to 12 and from 1 to 5. The attendance in 1908 was 3612.

SOUTH BEND:

NORTHERN INDIANA HISTORICAL SOCIETY.

This society was incorporated in 1896 and maintains a museum of ethnological, historical, and pioneer objects, and a library of 8222 volumes, in charge of George A. Baker, secretary, and occupying 9600 square feet of floor space in a stone building owned by the county. The library and museum are open free to the public daily from 9 to 5.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 25 acres, established in 1901, containing 26 reptiles, 35 birds, and 33 mammals.

UPLAND:

TAYLOR UNIVERSITY. Walker Museum.

No reply has been received from this museum, which is said by Merrill to comprise 500 fossils, 1000 minerals, 100 mounted birds and mammals, a collection of local plants and wood specimens, 300 Indian relics, and a collection of coins and postage stamps.

IOWA

CEDAR FALLS:

IOWA STATE TEACHERS COLLEGE.

The college maintains a museum representing the natural history of Iowa. The most important collections consist of implements of the stone age gathered from mounds in the vicinity. The museum is used primarily for instruction of public school teachers. A building is now being erected at a cost of $175,000 to house the museum and the college library.

CEDAR RAPIDS:

IOWA MASONIC LIBRARY AND MUSEUM.

This is said to be the only library building ever erected by a Grand Lodge, and in addition to a very extensive Masonic library contains a general museum including natural history specimens and articles of interest in connection with local and masonic history.

COLLEGE SPRINGS:

AMITY COLLEGE.

The college maintains in connection with the biological laboratory, and in charge of the instructor in biology, collections including about 200 specimens of wood from Page County; 30 kinds of minerals and 150–200 kinds of rocks; 300 fossils; and about 200 zoölogical specimens. This material is largely the result of local collections made by students, with gifts from alumni and friends of the college. The museum occupies one room but there are no provisions for its care other than that given by students.

DAVENPORT:

DAVENPORT ACADEMY OF SCIENCES. Museum.

STAFF. Acting director, E. K. Putnam; Curator and acting librarian, J. H. Paarmann; Assistant curator, Sarah G. F. Sheldon; Taxidermist, John Paddock; 1 janitor.

ANTHROPOLOGY. Archeology, native, 23,500±, foreign, 100±; Ethnology, native, 1400, foreign, 200±. These collections include the following items: 1300 specimens of ancient pottery from the lower Mississippi Valley, 15 from the upper Mississippi Valley, and 16 from cliff dwellings; 14,700 chipped implements, 1200 pecked implements, 800 polished implements of stone from the upper Mississippi Valley; 350 bone implements and 65 carved pipes from mounds of Iowa and Illinois; 2000 shell beads, 50 miscellaneous articles of shell, 34 copper axes, 300 copper beads, and 36 other copper articles from Iowa mounds; 200± crania from mounds of Mississippi Valley; and 1000± miscellaneous mound relics.

BOTANY. A fairly complete herbarium of local flowering plants and a collection of log specimens illustrating native trees of Iowa.

COMMERCE AND INDUSTRY. Collections illustrating the origin, cultivation, manufacture, uses, etc., of common things.

GEOLOGY. Minerals, on exhibition, 11,000±, in storage, 5000±; Rocks, 600±; Dynamic geology, relief maps, models, etc., 300±; Economic geology, 300±.

HISTORY. 400± specimens.

PALEONTOLOGY. Invertebrates, 6000±; Vertebrates, 100±; Plants, 6000±.

ZOÖLOGY. Shells, on exhibition, 500±, in storage, 20,000±; Insects, 15,000±; Other invertebrates, 2000±; Fishes, 100±; Batrachians, 12; Reptiles, 100±; Birds, 850±; Mammals, 60. There are also 42 mammal heads, 147 pairs of horns, 300 sets of bird eggs, and 100 skeletons of mammals.

HISTORICAL SKETCH. The Davenport Academy of Natural Sciences was organized in 1867 and incorporated in 1868; the present name was adopted in 1903. The active membership has grown from 50 in the first year to 300 at present. The museum was begun in 1868 and has been affiliated with the public schools since 1902.

FINANCIAL SUPPORT. The academy receives $1644 annually from endowment and $873 from memberships.

BUILDING. Erected in 1878 at a cost of about $15,000 paid by subscription, the building affords 12,000 square feet of floor space for exhibition, and 1200 for offices, workrooms, etc.

ADMINISTRATION. By a curator, responsible to a board of trustees.

SCOPE. One of the primary objects of the museum is public school work. The curator supervises the nature study of the public schools of Davenport, using material from the museum for illustration. Special attention is also given to the maintenance of local collections. Other objects of the museum are exploration, research, and instruction of the general public. An annual course of lectures has been maintained since 1902.

LIBRARY. 53,170 accessions, of which about 6000 are bound volumes, are accessible to both staff and public.

PUBLICATIONS. The academy has issued 12 volumes of Proceedings, beginning in 1876.

ATTENDANCE. Open on week-day afternoons and on the first Sunday afternoon in each month. Admission is free except on Monday, Tuesday, and Thursday afternoons when a fee of 10 cents is charged.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 10 acres, established in 1904, containing about 100 birds and 34 mammals.

DES MOINES:

HISTORICAL DEPARTMENT OF IOWA. Museum.

The museum was begun in 1892 by Charles Aldrich, founder of the department. It is devoted to popular and research collections covering the political and natural history of Iowa and the Middle West, which have increased rapidly in the number and diversity of objects. The museum is in charge of T. Van Hyning, assistant curator, under the direction of Edgar R. Harlan, curator of the department and successor to the founder after the death of the latter, March 8, 1908. The museum is now being organized in a fireproof building recently completed by the state for the housing of the department.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 50 acres, established in 1896, containing 6 birds and 75 mammals.

DUBUQUE:

HERRMANN MUSEUM OF NATURAL HISTORY.

STAFF. Archeologist, Arthur Herrmann; Botanist, Henry Herrmann; Librarian, Rosalie Herrmann; Taxidermist, Oscar Herrmann.

ANTHROPOLOGY. Uncivilized peoples: Archeology, native, 2000±; Ethnology, native, 200±, foreign, 50. Civilized peoples, ancient, 20±.

ART. Sculpture, 6; Prints and engravings, 50±; Oil paintings, 9; Water colors, 20; Ceramics, 25. There is also a collection of mats and basketry, chiefly from the Pacific coast.

BOTANY. 400± pressed plants of Dubuque County; 200 plants from Vancouver, Philippines, southern California, etc.; 50 mosses, lichens, etc.

COMMERCE AND INDUSTRY. 50± specimens illustrating Illinois and Wisconsin mining industries; 200 specimens illustrating the pearl button industry, etc.

GEOLOGY. Minerals, 800±; Rocks, 500±; Dynamic geology, etc., 20.

PALEONTOLOGY. Invertebrates, 30,000; Vertebrates, 5000; Plants 1000.

ZOÖLOGY. Shells, 1000; Insects, 300; Other invertebrates, 200; Fishes, 2; Batrachians, 1; Reptiles, 3; Birds, 50; Mammals, 10.

The museum is the property of the Herrmann family. It was founded about 1880 by Richard Herrmann and now occupies about 800 square feet of floor space for exhibition in the Herrmann residence. It is open free to the public and is much used by teachers and scholars.

FAYETTE:

UPPER IOWA UNIVERSITY. Museum.

STAFF. Curator, Guy West Wilson, who is also professor of biology.

ANTHROPOLOGY. Archeology, native, 120; Ethnology, native, 250, foreign, 120. These collections include a few American prehistoric remains and a collection from the Philippine Islands.

BOTANY. A herbarium of about 1000 phanerogams, for the most part from northeastern Iowa. Collections of the local lower flora are in process of formation.

GEOLOGY. Minerals, 490; Rocks, 100; Dynamic geology, etc., 50; Economic collections, 100.

PALEONTOLOGY. Invertebrates, 285; Vertebrates, 15; Plants, 40.

ZOÖLOGY. Shells, 965; Insects, 4 cases for demonstration; Other invertebrates, 230; Fishes, 120; Batrachians and reptiles, 20; Birds, 62; Mammals, 36; Embryology, 25; Bird eggs, 75.

HISTORICAL SKETCH. The museum was founded in 1857 and has always been an adjunct of the chair of natural sciences.

FINANCIAL SUPPORT. From the funds of the departments of biology and geology.

BUILDING. The museum occupies 1500 square feet of floor space in Science Hall.

SCOPE. College teaching and maintenance of local collections.

GRINNELL:

GRINNELL COLLEGE. Parker Museum of Natural History.

This museum occupies a part of Blair Hall and comprises botanical, geological, paleontological, and zoölogical collections, used primarily for purposes of instruction, but open free to the public on Saturday afternoon from 2 to 4.

INDEPENDENCE:

FREE PUBLIC LIBRARY.

The library contains a museum collection in temporary charge of S. W. Geiser, including the Walker collection of 2000 mollusks, and the Geiser collection of 700 minerals. It is intended to make this collection as complete a representation as possible of the local fauna and flora. Plans for its financial support are now being considered.

IOWA CITY:

STATE HISTORICAL SOCIETY.

The society has a small historical collection but does not emphasize this feature of its work.

STATE UNIVERSITY OF IOWA.

The university maintains teaching collections, as follows:

ANTHROPOLOGY. About 2000 specimens, the greater number from the Philippines, also collections representing the mound builders, North American Indians, Esquimaux, and Hawaiian Islands.

BOTANY. A herbarium of about 175,000 specimens, in charge of Thomas H. McBride, professor of botany, and B. Schimick, curator of the herbarium and assistant professor of botany.

GEOLOGY AND PALEONTOLOGY. 30,000 specimens including good local collections.

ZOÖLOGY. Shells, on exhibition, 1100 sets, in storage, 46 sets; Insects, on exhibition, 500 boxes, in storage, 12,500±, including several types and co-types; Other invertebrates, on exhibition, 875, in storage, 28,000±, including about 300 types and co-types; Fishes, on exhibition, 3 skulls, in storage, 7000±; Batrachians, on exhibition, 1, in storage, 50; Reptiles, on exhibition, 22, in storage, 500±; Birds, on exhibition, 1030, in storage, 10,550; Mammals, on exhibition, 345, in storage, 475. There are 4 large and 6 small groups of animals exhibited in natural surroundings. The collections in anthropology and zoölogy constitute the museum of natural history, with the following staff: Curator, C. C. Nutting; Assistant curator, H. F. Wickham; Taxidermist, Homer R. Dill; Assistant, Dayton Stoner; 4 janitors, engineer, etc. The museum occupies 28,000 square feet of floor space for exhibition and storage, and is open free to the public on week-days from 8 to 6, and on two evenings in each week until 10.

FINANCIAL SUPPORT. The museum collections are supported by the funds of the university through the departments to which they are related. The natural history museum receives about $2000 annually for taxidermy, etc.

MADRID:

MADRID HISTORICAL SOCIETY.

This society maintains a collection of local historical relics occupying 350 square feet of floor space. There is also a historical library of about 200 volumes, with many historic papers and autographs.

WAVERLY:

WARTBURG TEACHERS SEMINARY.

The seminary maintains teaching collections including plaster casts, microscopic preparations, skeletons, apparatus, etc.; and a natural history museum of about 12,000 specimens, including minerals, rocks, fossils, ethnological and zoölogical specimens, and a general herbarium.

WINTERSET:

MADISON COUNTY HISTORICAL SOCIETY.

The society has a historical collection of about 100 objects.

KANSAS

ATCHISON:

MIDLAND COLLEGE.

The following collections are in charge of D. W. Crouse, professor of physics and chemistry: about 300 casts and original implements of mound builders and American Indians; 2000 classified minerals, and several hundred unclassified; 800 fossils, including a local invertebrate series, miocene invertebrates of Virginia, fossil leaves from the Dakota group in Kansas, etc.; a herbarium of about 200 specimens; 200 birds and 20 other vertebrates.

BALDWIN:

BAKER UNIVERSITY. Museum.

STAFF. Chief curator, C. S. Parmenter; Curators, E. P. Monahan (ornithology and taxidermy), R. T. Reser (botany); 1 assistant in taxidermy.

COLLECTIONS. Anthropology, 3026; Botany, 45,130; Mineralogy, 5133; Paleontology, 21,223; Zoölogy, 57,159. The zoölogical collection includes 9400 shells, 45,113 insects, 631 marine invertebrates, 304 reptiles, 976 birds, 135 mammals, and 1000 bird eggs and nests. There is also a museum library of about 2000 volumes.

FINANCIAL SUPPORT. By special department fees, amounting to about $400 a year.

BUILDING. The museum occupies about 3200 square feet of floor space for exhibition.

ATTENDANCE. Open free to students and the general public on week-days.

EMPORIA:

COLLEGE OF EMPORIA.

The college maintains the following collections, in charge of D. C. Schaffner: Archeology, native, 2500, foreign, 50; Botany, 400 (local flora); Minerals, 1500; Rocks, 300; Fossils, 2500; Mollusca, marine, 1000, fresh-water, 350 (local); Insects, 250; Other invertebrates, 75; Fishes, 200; Other vertebrates, 25.

KANSAS STATE NORMAL SCHOOL. Museum.

Staff. The museum is in charge of W. H. Keller, curator, under the supervision of L. C. Wooster, head of the department of biology and geology.

Anthropology. About 300 specimens including Indian relics, Philippine material, etc.

Art. The museum has no art collection but the art department of the school has a collection of casts and copies of great works of art, and a series of lantern slides for classroom instruction.

Botany. Good collections for teaching purposes.

Geology. Minerals, 500; Rocks, 500. This collection includes a good series of stalactites.

Paleontology. Invertebrates, 1000; Vertebrates, 50; Plants, 50.

Zoölogy. Shells, 400; Insects, 1000; Other invertebrates, 200; Fishes, 25; Batrachians, 10; Reptiles, 50; Birds, 450; Mammals, 100; Bird eggs, 800.

Historical Sketch. The museum is largely the result of the work of D. S. Kelly, who was head of the natural history department from 1885 to 1897.

Financial Support. An annual appropriation of $200 from the school.

Building. The museum occupies 5200 square feet of floor space for exhibition, and 900 for offices, workrooms, etc. in the science building, erected in 1905 at a cost of $50,000.

Scope and Attendance. Maintained primarily for teaching purposes, but also open to the public on week-days from 7.30 to 6.

LAWRENCE:

UNIVERSITY OF KANSAS. Museums.

Staff. Director, Frank Strong; Curators, Lewis L. Dyche (vertebrate zoölogy), Clarence E. McClung (vertebrate paleontology), Samuel J. Hunter (entomology), Erasmus Haworth (geology and mineralogy), William C. Stevens (herbarium), Alexander M. Wilcox (classical museum); Assistant curators, Handel T. Martin (paleontology), Charles D. Bunker (vertebrate zoölogy), Francis X. Williams (entomology).

Anthropology. A few hundred specimens on exhibition.

Botany. A herbarium of about 10,000 species, representative of the North American flora. It comprises a good collection of lichens and economic fungi, and of sections of our native woods.

GEOLOGY. Minerals, 5000, partly in storage; Rocks, 2000; Thin sections of rocks, 1000±; Dynamic geology, relief maps, models, etc., 100±; Economic geology, 1000+. The collection of rocks includes, in addition to a general series from all parts of the world, a very extensive collection of granites, porphyrites, and basic dike rocks from the Missouri crystallines. The economic collection is especially rich in ores, including a very complete series of lead and zinc ores and associated minerals from the Galena-Joplin district.

PALEONTOLOGY. About 10,000 specimens, including extensive collections of American cretaceous and other fossil vertebrates. The invertebrates include about 2000 species, representing all the principal geological formations, but especially rich in Kansas forms. Special mention may be made of the series of fossil birds, which is said to include some of the best specimens known; of a collection of pterodactyls and plesiosaurs, seldom equalled; of a nearly complete representation of cretaceous fishes; and of the series of turtles, including a number of type specimens described by Dr. Williston. There are 13 large mounts, and a series of casts showing the evolution of the horse. In paleobotany, the Dakota and Comanche cretaceous series are best represented and include many undescribed forms. In addition to the collection of tertiary plants, there is a very large and valuable series of carboniferous plants from Kansas, including many not yet known to science.

ZOÖLOGY. The general collection includes: Shells, 1000 species from all parts of the world; Alcoholic invertebrates, 500; Birds, 1503 mounted specimens, chiefly from Kansas, and 3453 skins; Mammals, 250 large mounted specimens, 1125 skins, and 8 heads; North American bird eggs, 3572; Skeletons, 1341 mammals, 38 birds, and 7 reptiles. This is said to be one of the most complete collections in the world. Nearly 1000 square feet of floor space is given to a panorama exhibit, 500 feet long, of the larger North American mammals mounted in natural surroundings.

In addition to the general collection enumerated above, there is an entomological series of 275,000 specimens, representing 25,000 species of all orders and including 1000 types. There are also extensive bionomic collections. The collections in this department are said to be among the largest connected with any educational institution in the United States. Annual collecting expeditions and a regular system of exchange are steadily increasing the size of these collections.

Classical Museum. This museum is located in Fraser Hall, and includes many plaster casts, models, relief maps, restorations, plates and engravings, a complete set of Brunn's plates of Greek and Roman sculpture, 55 Braun photographs of the Elgin marbles, photographs illustrating Roman topography and life, miscellaneous art collections, and 1800 stereopticon slides of Greek and Roman views, portraits, buildings, etc.

Other Departments. The collection of about 2000 specimens for illustrative use from the department of pharmacy is housed in the chemistry building, under the care of Lucius E. Sayre, curator. An extensive collection for the illustration of lectures in the department of chemistry is in charge of Edgar H. S. Bailey, curator.

Historical Sketch. The museums of the university have been built up by the professors in charge of the various departments, during a period of thirty-six years. University exploring parties have accumulated most of the material in the natural history section.

Financial Support. By special appropriations from the state, and by university funds.

Building. Nearly all the collections are housed in the museum of natural history, completed in 1903 at a cost of $75,000, defrayed by the state. About 30,428 square feet of floor space is available for exhibition, and 6112 for storage, offices, workrooms, etc.

Administration. By a board of regents, appointed by the governor of the state. The regents choose the curators of the departments.

Scope. College teaching, instruction of the general public, and exploration and research by the staff.

Attendance. Open free to the public on week-days from 8 to 5.

LINDSBORG:

BETHANY COLLEGE.

The president reports that the college maintains a museum in charge of E. O. Deere, curator. No reply has been received to repeated requests for further information.

This college is said by Merrill to have 2000 anthropological specimens, 1500 botanical specimens, 500 fossils, 800 minerals, 1000 zoölogical specimens, and a large collection of coins, paper money, and postage stamps.

MANHATTAN:

KANSAS STATE AGRICULTURAL COLLEGE.

The college maintains a museum primarily for teaching purposes in charge of T. J. Headlee, curator, and comprising the following collections: 1380 trays of shells; 535 cases of insects; 150 mollusks in alcohol; over 500 other invertebrates; 155 fishes; 206 reptiles and batrachians; 339 mounted birds; 675 bird skins; 270 bird eggs and nests; 585 mammals. There is also a geological collection of 3900 specimens in addition to a number of special working collections. There is a small collection of ethnological specimens. The museum occupies three rooms affording a floor space of about 6000 square feet, and is open free to the public on week-days from 8.30 to 12 and from 1 to 5. It is supported by appropriations from the board of regents of the college, usually amounting to about $300 annually.

SALINA:

KANSAS WESLEYAN UNIVERSITY.

No information has been received in response to repeated inquiries regarding the collections of this university, which are said by Merrill to include 300 ethnological specimens, 200 native plants, 1200 minerals, 500 specimens of economic and historical geology, 900 fossils, and 7000 zoölogical specimens.

TOPEKA:

KANSAS STATE HISTORICAL SOCIETY.

This society maintains a museum comprising about 4000 specimens of native archeology and 1000 of native ethnology; an art collection including 7 busts, 3 tablets, 7140 prints and engravings, 36 oil paintings, and about 100 textiles; a collection of looms, spinning wheels, reels, and old furniture; about 3500 historical specimens; and a collection of about 600 medals, coins, etc.

The Kansas State Historical Society was formed in 1875 and has received legislative appropriations since 1877. For the years 1910–11 the appropriation amounts to $10,400 annually, besides printing. There is also an income from the fees of members. A building is now being erected for the society by the state at a cost of $200,000. No funds are available for the purchase of objects for the museum. In addition to the museum the society maintains a historical reference library, including 35,336 books, 37,261 newspapers and magazines, 107,459 pamphlets, 117,593 archives, 44,051 manuscripts, and 6355 maps, etc. The society also issues the following publications: (1)

Kansas Historical Collections, 11 volumes issued since 1875. (2) Biennial reports, 16 issued since 1879.

The museum and library are in charge of the secretary of the society, George W. Martin, who is assisted by a staff of 7 persons.

WASHBURN COLLEGE. Museum.

The college museum formerly contained about 500 fossils, 8000 minerals, 500 rocks, 2000 specimens in zoölogy, and a herbarium of about 4000 specimens. This collection was damaged by fire about a year ago. The minerals were nearly all saved, but the herbarium was injured by water and the zoölogical collection suffered seriously. The building has been rebuilt, but the collections are still in storage. The museum is in charge of Ira D. Cardiff, professor of botany.

WICHITA:

ZOÖLOGICAL PARK.

The city maintains a zoölogical park, established in 1905, containing 16 mammals.

KENTUCKY

BOWLING GREEN:

OGDEN COLLEGE.

The college maintains teaching collections comprising 2000 minerals, 200 specimens of economic geology, and 2000 fossils. These are in charge of J. W. Morrison, professor of natural science.

FRANKFORT:

KENTUCKY STATE HISTORICAL SOCIETY.

The society possesses a collection of 54 oil paintings; 12 water colors; numerous prints and engravings; historic china; shells; swords, rifles, flags, etc.; also books, pamphlets, and newspapers.

LEXINGTON:

KENTUCKY GEOLOGICAL SURVEY.

The director of the survey, Charles J. Norwood, reports that its collections are primarily economic and are maintained for the purpose of exhibiting the mineral resources of the state. The records are not in such form as to indicate the number of specimens in the various departments, having been recently removed to a new building.

TRANSYLVANIA UNIVERSITY.

The university maintains a museum in charge of Alfred Fairhurst and Charles Albert Schull, occupying about 2000 square feet of floor space in the new science building completed in 1908. The collections include 100 articles from Japan, consisting of images, household utensils, etc.; 1000 stone implements from the United States; 50 war clubs, bows and arrows, etc., from the islands of the Pacific; 175 Chinese coins; 200 rocks; 500 minerals; 600 trays of fossils; 200 species of recent shells; 50 corals; 250 bottles of alcoholic material; 900 mounted birds and 200 skins; 75 of the smaller mammals; etc. Many of the birds were collected by the United States exploring expedition in the Southwest, Mexico, Central and South America. A valuable collection of Australian birds was presented by Mr. O. A. Carr. The museum is open to students and to the public five days in each week during the college year.

LOUISVILLE:

LOUISVILLE FREE PUBLIC LIBRARY.

This library was organized in 1902 and opened to the public in 1905. Into it was merged the Polytechnic Society of Kentucky, organized in 1876, which included an art collection, comprising 26 fine oil paintings and many others of minor importance, valued at $15,000, and 4 statues, valued at $25,000; and a natural history collection, consisting of minerals, shells, ferns, birds, etc. The pictures and statuary are exhibited in the library rooms and corridors. The natural history material fills a room 38 x 60 feet on the ground floor. The museum is open free to the public on week-days from 2 to 5 and on Saturday mornings from 9 to 12. On Sundays it is open from 2 to 6. The attendance since its opening on October 18, 1909, has averaged 92 per day.

It is expected that the Jefferson Institute of Arts and Sciences, organized in 1909, will ultimately secure a separate building, in which case the library will probably turn its museum material over to the institute.

LOUISIANA

BATON ROUGE:

LOUISIANA STATE UNIVERSITY.

The university maintains teaching collections in agriculture, botany, geology, history, and zoölogy, in charge of the professors of these departments.

NEW ORLEANS:

LOUISIANA HISTORICAL ASSOCIATION. Memorial Hall.

The association maintains a collection of war relics in Memorial Hall, which is supported by a state appropriation of $1400 a year. The directors of the association are elected annually by the five veteran camps of the city.

LOUISIANA STATE MUSEUM.

STAFF. Curator, Robert Glenk; Honorary curators, Alcee Fortier (history), George Williamson (archeology).

ANTHROPOLOGY. Uncivilized peoples: Archeology, native, 1000, foreign, 50; Ethnology, native, 100, foreign, 10. Civilized peoples, ancient, 100, modern, 25. There are also photographs of Indian mounds and Indian pottery.

ART. Sculpture, 25; Prints and engravings, 121; Oil paintings, 86; Water colors, 10; Ceramics, 50. The collection includes Lamie's painting (15 x 18 feet) of the Battle of New Orleans; and sketch models of the proposed statues to J. J. Audubon, Beauregard, and Bienville.

BOTANY. Cryptogams, 100; Phanerogams, 250. There is in addition a large number of forestry specimens.

COMMERCE AND INDUSTRY. Very complete exhibits of all varieties of agricultural and horticultural productions of Louisiana, and of local manufactured articles.

EDUCATION. A large display of the work of schools, colleges, and sectarian and technical institutions of Louisiana.

GEOLOGY. Minerals, 1500; Rocks, 100; Dynamic geology, relief maps, models, etc., 20. There are special collections of petroleums and sulphur minerals.

HISTORY. Portraits, documents, letters, autographs, and other material related to the history of Louisiana. The collection includes the original Antomarchi death mask of Napoleon.

PALEONTOLOGY. Invertebrates, 600; Vertebrates, 100; Plants, 40.

ZOÖLOGY. Shells, 2000; Insects, 1500; Other invertebrates, 50; Fishes, 300; Batrachians, 40; Reptiles, 100; Birds, 900; Mammals, 100. This department includes a very complete exhibit of the Louisiana oyster industry.

HISTORICAL SKETCH. The nucleus of the museum is the Louisiana exhibit at the St. Louis World's Fair in 1904. This was maintained for two years at the expense of the Louisiana commission as the State Exhibit Museum. In 1906 the Louisiana State Museum was established by the legislature and the sum of $10,000 was appropriated for its maintenance for two years. It has developed rapidly and has now outgrown its present quarters. The city council has recently given the museum two historic buildings for its future home.

FINANCIAL SUPPORT. By optional appropriation of the state legislature, at present amounting to $5000 annually.

BUILDING. The museum at present occupies a rented building affording about 13,000 square feet of floor space for exhibition. Two buildings have been set apart for the museum by the state and to these the collections will soon be transferred.

ADMINISTRATION. By a curator, responsible to the president and executive committee of a board of curators (trustees).

SCOPE. The museum is the designated repository of all historic and scientific material belonging to the state. Its primary purposes are instruction of the general public and maintenance of local collections.

LIBRARY. 1000 volumes and 3000 pamphlets relating to history and science and intended for the use of both staff and public. The library includes many historical maps, charts, etc., and a complete set of the elephant folio edition of Audubon's Birds.

PUBLICATIONS. (1) Biennial Reports. (2) Guides to places of historic interest in New Orleans.

ATTENDANCE. Open free to the public on week-days from 9 to 5. The number of visitors in 1908 was 105,000.

TULANE UNIVERSITY. Museum.

The collections possessed by the university, now occupying the entire third floor of Gibson Hall, had their origin in the cabinet of minerals and rocks of the New Orleans Academy of Sciences, and the purchase in 1884 of a part of the Ward Natural Science exhibit at the exposition of that year. The museum contains the following collections: Anthropology, 500 specimens, chiefly relics of the Indians and the mound builders. Botany, a herbarium of 30,000 specimens, including the famous Hale collections. Mineralogy, 8000 specimens. Paleontology, 6000± specimens. Invertebrate zoölogy, 300 sponges, 200 corals, 3000 shells, 300 Blaschka glass models of coelenterates, holothurians, vermes, etc., 200 crustaceans. Vertebrate zoölogy, a nearly complete representation of Louisiana fresh and salt-water fishes, in all about 800 specimens; 1100 batrachians, including the Kohn collection of over 200 mounted turtles of North America; 5000 birds, comprising a complete representation of Louisiana and North American species, and a number of groups; 300 mammals; 200 skeletons.

The museum receives a small yearly appropriation from the Tulane Academy fund and a yearly donation from an interested friend. It is in charge of George E. Beyer, curator, and will soon be open free to the public.

MAINE

AUGUSTA:

KENNEBEC HISTORICAL SOCIETY.

No reply has been received to repeated requests for information regarding the collections of this society, which are said by Merrill to include a general collection of minerals, and other natural history specimens.

BRUNSWICK:

BOWDOIN COLLEGE. Art Collections. (Walker Art Building.)

STAFF. Curator, Henry Johnson.

COLLECTIONS. The sculpture hall contains 2 Hellenistic and Roman marbles and 11 casts of classical figures and groups of statuary, in addition to mural decorations by John La Farge, Elihu Vedder, Abbott Thayer, and Kenyon Cox. The Sophia Walker gallery contains specimens of ancient glass, Roman sculpture, old Flemish tapestry, oriental ivory carvings, miniatures, etc., with paintings and drawings by Corot, Millet, Troyon, Daubigny, R. Bonheur, Mauve, La Farge, and other modern artists of high rank, and a bronze relief portrait, by French, of Theophilus Wheeler Walker. The Bowdoin gallery contains about 100 paintings, chiefly by early American artists, and 150 original drawings by old and modern masters. The Boyd gallery contains the Boyd collection of paintings; a collection of Japanese and Chinese works of art, loaned by Professor William A. Houghton; the Cowles collection of objects of oriental art, formerly a part of the Houghton collection; the Virginia Dox collection of objects of native American art; and other collections given or loaned by friends of the college. An Assyrian room in the basement contains 5 gypsum slabs from Nineveh, carved in bas-relief and bearing cuneiform inscriptions. These were presented in 1857 by Henri Byron Haskell, Esq. There are also a few hundred lantern slides and a series of heliotype reproductions of works of art.

HISTORICAL SKETCH. The Hon. James Bowdoin bequeathed his collection to the college in 1811. The Boyd collection was presented in 1810 and was supplemented in 1859 by the bequest of property valued at over $10,000. These collections were housed in the college chapel previous to the erection of the present building.

Financial Support. By the income from endowment.

Building. Erected from designs by McKim, Mead, & White, in 1892, by the Misses Harriet and Sophia Walker of Waltham, Mass., as a memorial of their uncle, the late Theophilus Wheeler Walker. It is 100 feet in length by 73 in depth and is constructed of granite, limestone, and brick. In addition to the exhibition space it affords, in the basement, a lecture room, a room of Assyrian sculpture, curator's and students' rooms, etc.

Scope. In addition to the exhibition of art collections, a limited amount of educational work is carried on by means of explanatory demonstrations by the curator.

Attendance. Open free to the public about 5 hours each weekday. The attendance is about 9500 a year.

The college also has portraits and other art objects in the chapel, the library, and Memorial and Massachusetts halls. The scientific departments maintain small teaching collections regarding which detailed information is not available.

ELIOT:

WILLIAM FOGG LIBRARY.

In response to an inquiry addressed to the Eliot Historical Society it is stated that the William Fogg Library maintains a small museum. No further information has been received.

HINCKLEY:

GOOD WILL HOME ASSOCIATION.

This institution maintains a collection including about 600 specimens of geology and mineralogy, 75 birds, 40 mammals, 10 fishes, 75 archeological specimens, etc. The original museum was burned about five years ago, and the present collection has been gathered at a cost of about $2000.

NORTH BRIDGTON:

BRIDGTON ACADEMY.

The academy has a general natural history museum occupying a wooden building 30x40 feet and used primarily for class instruction.

ORONO:

UNIVERSITY OF MAINE. Museum of Natural History.

Staff. Director, Gilman A. Drew; Curators, Gilman A. Drew, (zoölogy), Lucius H. Merrill (geology), Mintin A. Chrysler (botany); Assistant curator and taxidermist, Cyrus S. Winch (zoölogy).

ANTHROPOLOGY. 150± local specimens.

BOTANY. 15,000± specimens, including the Halsted collection of New England lichens; the Cummings and Seymour collection of lichens; Cook's illustrative collection of fungi; the Ellis and Everhard collection of fungi; the Underwood collection of liverworts; the Sullivan and Lesquereaux collection of mosses; the Blake herbarium of 10,000± cryptogams and phanerogams; the Halsted collection of weeds and the Harvey collection of weeds and forage plants of Maine; and a special herbarium of cryptogams and phanerogams of Maine.

GEOLOGY. A good teaching collection, including a series of Maine minerals and an economic collection of 300± specimens.

PALEONTOLOGY. A general teaching collection of about 500 specimens.

ZOÖLOGY. A general collection of about 1000 specimens, including much local material, and several groups of animals exhibited in natural surroundings.

ORRS ISLAND:

ORRS ISLAND LIBRARY.

This is an incorporated institution maintained largely by summer visitors. As one branch of its educational work it maintains a museum devoted to the fauna and flora of the island and surrounding waters. The collections include a herbarium of about 300 specimens, a collection of 100 shells, 30 invertebrates in fluid, 12 snakes, and occasional representatives of other classes. These collections are in charge of Ellen M. Mountfort, librarian, and John L. Stilphen, assistant.

PARIS:

HAMLIN MEMORIAL HALL.

While this is primarily a library of about 2000 volumes it also contains portraits of the Hamlin family, and an interesting exhibit of cut tourmalines and tourmaline crystals from neighboring Mt. Mica. The building was formerly the county jail and was deeded to the Paris Hill Library Association about 1902, through the efforts of Dr. Augustus Choate Hamlin of Bangor, Maine, as a memorial to his son. Dr. Hamlin at his death endowed the library in the sum of $5000. The library and museum are open free to the public, through the summer months, on Mondays from 3 to 4.30 and on Wednesday and Saturday evenings from 7.30 to 9. During the winter it is open only on Wednesdays from 2.30 to 4 and from 7.30 to 9.

POLAND SPRING:

POLAND SPRING ART GALLERY.

The gallery is in charge of Nettie M. Ricker, art director, and has no permanent collections, but holds an annual art exhibition.

PORTLAND:

MAINE HISTORICAL SOCIETY.

The society has a good collection of historical relics of Maine.

PORTLAND SOCIETY OF NATURAL HISTORY. Museum. (22 Elm Street.)

STAFF. Cabinet keeper and librarian, Arthur H. Norton; Curators, Dana W. Fellows (botany), Mrs. Helen A. Lewis (entomology), Arthur H. Norton (ethnology), H. M. Mailing (mineralogy).

ANTHROPOLOGY. Uncivilized peoples: Archeology, native, 2000±, foreign, 573±; Ethnology, native, 200±, foreign, 200±. Civilized peoples, ancient, 200±, modern, 150±.

ART. Prints and engravings, 50±; Oil paintings, 300±; Water colors, 50±; Ceramics, 50±; Textiles, 100±.

BOTANY. Cryptogams, 2068; Phanerogams, 11,610; Woods, 1000; Fruits and seeds, 2000.

GEOLOGY. Minerals, on exhibition, 5000±, in storage, 3000±.

PALEONTOLOGY. Invertebrates, 2500±; Vertebrates, 500±; Plants, 1000, including 4 figured specimens. Of special interest is the Perry collection of devonian plants of Maine, and local post-pliocene marine fossils.

ZOÖLOGY. Shells, on exhibition, 7135±, in storage, 2000±; Insects, on exhibition, 200, in storage, 1000; Other invertebrates, on exhibition, 250, in storage, 1000±; types and figured specimens, 2; Fishes, on exhibition, 37, in storage, 100; Batrachians, 50; Reptiles, on exhibition, 55, in storage, 100±; Birds, on exhibition, 400, in storage, 1500±, types, 1; Mammals, on exhibition, 27, in storage, 17; Bird nests, 91, eggs, 581.

HISTORICAL SKETCH. The society was organized in 1843 and incorporated in 1850. In 1854 its museum and library, including the entire collection of shells of Dr. Jesse W. Mighels, with many types, were destroyed by fire. In 1866 the museum and library were again destroyed by fire, the collections lost at this time including a large series of specimens gathered by the second state geological survey—minerals and fossils by C. H. Hitchcock, plants by George L. Goodale, etc.

Financial Support. The society receives approximately the following amounts annually: income from endowment, $272, from an optional city appropriation, $300, from memberships, $200, from other sources, $275.

Building. Erected in 1879 at a cost of $20,000, defrayed by subscription, the building affords 2608 square feet of floor space for exhibition, 1313 for offices, workrooms, etc., and 1301 for lecture room.

Administration. By a cabinet keeper, and committees, responsible to a board of twelve trustees, of which he is one.

Scope. Public school work, instruction of the general public, and maintenance of local collections.

Library. 4500 bound volumes in addition to pamphlets, maps, etc., of a scientific character, intended for the use of both staff and public.

Publications. (1) Journal, discontinued when 1 part had been issued. (2) Proceedings, 2 volumes (10 parts) issued.

Attendance. Open free to the public on week-days from 2 to 4

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of half an acre, established in 1890, containing about 50 birds and 20 mammals.

SACO:

YORK INSTITUTE.

The secretary reports that the institute maintains a museum, but no reply has been received to repeated requests for further information regarding the collections, which are said by Thwaites to comprise local historical material and a portrait gallery.

WATERVILLE:

COLBY COLLEGE.

Anthropology. A series of masks of Pacific Islanders.

Art. A collection of portraits of distinguished benefactors and friends of the college; casts of noted pieces of sculpture; and sets of photographs and representations for the illustration of lectures on the history of art.

Botany. A herbarium of about 1500 specimens of native plants; 200 microscopic sections of plant tissues and organs; and models of typical plants.

Geology and Paleontology. A general collection of 3500 minerals; a state geological collection; a series of New York rocks;

Rosenbusch's set of 490 massive rocks and 100 European crystalline schists; 150 specimens of typical American rocks; 86 hand specimens of rocks illustrating precambrian geology; 400 thin sections of typical rocks; 175 crystal models; a series of 600 characteristic American fossils and casts of some foreign species; a number of relief maps, models, etc.; 725 geological photographs; and about 500 lantern slides.

Zoölogy. A teaching collection comprising a synoptic collection of invertebrates; a number of mounted vertebrate skeletons; and 200 histological preparations.

The art collections are housed in Memorial Hall and the science collections in Coburn Hall.

MARYLAND

ANNAPOLIS:

MARYLAND GEOLOGICAL SURVEY.

The survey maintains in the old hall of delegates at the state house a large collection of applied geology, relating chiefly to Maryland. This collection is open free to the public daily and is visited by several thousand people annually.

The working collections of the survey in paleontology, mineralogy, and historic and economic geology are in Baltimore, in charge of William Bullock Clark, state geologist, as is also a working library of over 1000 volumes, consisting largely of geological reports. Serial reports and monographs are issued by the survey.

BALTIMORE:

JOHNS HOPKINS UNIVERSITY.

The university has no central museum but working collections are maintained in connection with the scientific departments, those in geology, zoölogy, and botany being especially extensive.

MARYLAND ACADEMY OF SCIENCES. (105 West Franklin St.)

Staff. The museum is in charge of P. R. Uhler, president of the academy.

Anthropology. 100,000± artifacts of aborigines of Maryland.

Botany. A large collection of Maryland plants, including mosses, lichens, fungi, and algae, as well as flowering plants, and a collection of woods of the state.

Geology. 2000 species of minerals; a typical collection of Maryland rocks; and a few hundred specimens of dynamic geology. The

Chatard collection, while covering the whole field of mineralogy, is rich in European specimens, and in those from Pennsylvania, Maryland, and North Carolina localities, particularly the great variety of quartz and corundum occurring in North Carolina, and the zeolites from the gneiss of Jones' Falls near Baltimore, where the old localities are largely exhausted or built over. The Dalrymple collection contains principally European specimens.

PALEONTOLOGY. A series including all fossils described from the state of Maryland, and a large general collection. There are two large and probably unique exhibits showing a miocene and an upper silurian (Helderberg) coral reef, in which all the specimens are obtained from Maryland localities.

ZOÖLOGY. The collections are confined to Maryland and include a small collection of typical land and marine shells; 10,000 species of insects; 600 species of birds; and the typical fishes, reptiles, and mammals of the state. Many of the birds and mammals are mounted in small groups with natural surroundings. Beside the above, a large case contains a reproduction of a characteristic coral reef of the Caribbean region, including 37 or more species of recent corals arranged exactly as in nature.

HISTORICAL SKETCH. The collections gathered by the academy from 1859 to 1882 were presented to the Johns Hopkins University; after this and prior to 1890 the building now occupied by the academy became available and a museum was started for the maintenance of Maryland collections.

BUILDING. A former residence occupying a lot 50 x 150 feet; given to the academy by Enoch Pratt, Esq., a member.

SCOPE. Maintenance of local collections.

LIBRARY. More than 1000 volumes intended for the use of the academy.

PUBLICATIONS. The society has issued one volume of over 400 pages, and has a second in course of publication.

WALTERS GALLERY.

This gallery contains a private collection, including over 750 paintings, 100 water colors and designs, and a host of art treasures, comprising marbles, bronzes, terra cottas, carved ivories, porcelains, potteries, ancient and modern jewelry, enamels, carved woods, tapestries, lacquers, miniatures, and rugs. Through the courtesy of the owner, Mr. H. Walters, the galleries are open to the public on Wednesdays and Saturdays from January 1 to April 30 between the hours of

11 and 4. The proceeds from the admission fees of 50 cents are received by the Poor Association of Baltimore, following the custom of the elder Mr. Walters, who adopted it in 1873.

THE WOMAN'S COLLEGE OF BALTIMORE. Museum.

STAFF. Director, Arthur Barneveld Bibbins.

ANTHROPOLOGY. Uncivilized peoples: Archeology and ethnology, native, 20,000±, foreign, 2000±. Civilized peoples, ancient, 500, modern, 50.

ART. Sculpture, 12; Prints and engravings, 1000±; Oil paintings, 10; Water colors, 36; Ceramics, 25; Textiles, 12; Lantern slides, 400.

ASTRONOMY. 50± lantern slides and 1 small telescope.

BOTANY. Cryptogams, 2000±; Phanerogams, 8000±.

COMMERCE AND INDUSTRY. Oil, iron, tin, copper, zinc, and phosphates, 700±.

GEOGRAPHY. Lantern slides and stereographs, 500±.

GEOLOGY. Minerals, 20,000±; Rocks, 1000±; Dynamic and structural geology, relief maps, models, etc., 500±; Microscopic slides, 3500±.

HISTORY. American, 100±, foreign, 50.

PALEONTOLOGY. Invertebrates, on exhibition, 1000±, in storage, 50±; Vertebrates, on exhibition, 12, types and figured specimens, 2 (miocene whale skulls); Plants, on exhibition, 250±, in storage, 500±, types and figured specimens, 7 (cycads). This department includes extensive collections from the Potomac group, comprising more than 100 silicified cycad and palm trunks from Maryland.

ZOÖLOGY. Shells, 500; Other invertebrates, 100; Fishes, 12; Reptiles, 2; Birds and eggs, 2000; Mammals, 10.

OTHER COLLECTIONS. Coins and medals, 2500±; Babylonian tablets, ancient and modern, 24±; "Tyndall Iceland Spars" and Foucault prisms valued at several thousand dollars. President-emeritus Goucher also has, in his adjoining residence, a select collection of rare books, prints, ethnologic and mineralogic material, gems, etc., which he considers part of the college collections.

HISTORICAL SKETCH. The museum was established about 1893, the first accession being a collection of 250 minerals from the late John W. Lee of Baltimore. Most of the subsequent accessions have come as gifts or by purchase by friends of the college. The number of objects exceeds 100,000.

FINANCIAL SUPPORT. The museum receives occasional college appropriations. The director serves without salary, in connection with his duties as head of the department of geology.

Building. The museum occupies the center pavilion of Goucher Hall, erected in 1886, which affords about 2000 square feet of floor space for exhibition, and about 1000 for offices, dark-room, workroom, storeroom, etc.

Administration. By a director, responsible to the president of the college.

Scope. College instruction is the primary purpose of the museum; field investigation is undertaken as time permits.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 6 acres, established in 1882, containing 4 reptiles, 72 birds, and 83 mammals.

BELAIR:

HARFORD COUNTY HISTORICAL SOCIETY.

This society occupies a room in the court house, in which it maintains a collection of articles of local historical interest, including photographs, private papers, books, files of county newspapers, etc. An effort is being made to secure a new building for these collections in combination with a library and reading room.

ELLICOTT CITY:

ROCK HILL COLLEGE.

The college has a museum including about 800 photographs, coins, musical instruments, native manuscripts, etc. from Ceylon, and plaster casts of American Indian relics; a herbarium of 2500 specimens, including a complete set of the ferns of Howard County; and a teaching collection of about 2000 minerals.

MASSACHUSETTS

AMHERST:

AMHERST COLLEGE. Museum.

Staff. The collections are in charge of B. K. Emerson (geology) and F. B. Loomis (zoölogy).

Anthropology. Archeology, native, 30,000±, foreign, 500±; Ethnology, native, 50, foreign, 500±. This collection comprises about 7000 specimens from the Connecticut Valley, including the Gilbert collection of stone relics of American Indians found within 50 miles of Amherst College; about 2000 from the Maine shell heaps; 2000 from New England in general; about 10,000 from the Champlain Valley; and about 10,000 from the United States in general. There are also

500 bas-reliefs, cylinders, coins, and seals from Nineveh and Babylon. The entrance hall of the library is also lined with large slabs from Nineveh.

ART. 75 casts of Greek sculpture; 1000 carbon photographs of Italian art; and about 200 miscellaneous objects from Assyria and Babylon.

BOTANY. Cryptogams, 4000±; Phanerogams, 3000±. This collection includes the Tuckerman lichens.

GEOLOGY. Minerals, on exhibition, 3000±, in storage, 10,000±; Rocks, on exhibition, 1000, in storage, 10,000±; Dynamic geology, relief maps, models, etc., 25. The greater part of the minerals in this department are in the Shepard collection, which is particularly rich in rutiles from Massachusetts and the southern Appalachian region; tourmalines from Paris, Maine; a very complete collection of gems; and a meteorite collection of great value, including 118 aerosiderites and 180 aerolites. There are 2000 specimens illustrating concretionary forms and metamorphism; many thin sections of rocks; and large collections illustrating the early geological surveys of the New England states, Vermont by Prof. C. B. Adams, Connecticut by Prof. C. U. Shepard, and Massachusetts by President E. Hitchcock.

PALEONTOLOGY. Invertebrates, on exhibition, 7000±, in storage, 25,000±, types and figured specimens, 25; Vertebrates, on exhibition, 300, in storage, 1000±, types and figured specimens, 40; Plants, on exhibition, 300±, in storage, 100±. Important mounted skeletons and restorations include *Megacerops tyleri* Loomis (type), *Stegmodus longipes* E. and L. (type), *Eohippus borealis*, *Mesohippus bairdi*, *Stenomylus hitchcocki* (type). The Hitchcock collection of fossil footprints from the Connecticut Valley is especially noteworthy, numbering over 20,000 tracks containing most of the types. There is also an exceptionally full series of vertebrate fossils from southern pleistocene formations; a general collection of foreign material; and a unique series of carboniferous fishes from Scotland.

ZOÖLOGY. Shells, on exhibition, 20,000, in storage, 10,000, types and figured specimens, 300±; Insects, on exhibition, 100, in storage, 100; Other invertebrates, on exhibition, 300, in storage, 400; Fishes, 40; Batrachians, 25; Reptiles, 50; Birds, on exhibition, 400, in storage, 300; Mammals, on exhibition, 100, in storage, 100. 1 large winter group of seed-eating birds is exhibited in natural surroundings, and more are contemplated.

FINANCIAL SUPPORT. The museum receives an income of $900 annually from endowment; additional support from the college; and irregular amounts from subscriptions, averaging about $800 a year. Funds received from subscriptions are chiefly used for buying specific collections or for sending out field parties.

Building. The museum occupies 10,000 square feet of floor space for exhibition in a building erected by the college in 1909, at a cost of $90,000.

Scope. College teaching, exploration, and research.

Attendance. Open free to the public daily.

MASSACHUSETTS AGRICULTURAL COLLEGE.

The college maintains teaching collections in connection with its several departments, as follows:

Agronomy. Samples of grains and seeds of economic importance in field culture.

Animal Husbandry. A set of plaster-of-paris models of foreign and domestic breeds of horses, cattle, sheep, and swine; and a collection of food stuffs available for the use of the New England farmer.

Botany. A collection of Massachusetts timber trees, and various specimens illustrating scientific methods of treating trees; and a herbarium comprising 12,000 sheets of fungi, 1200 sheets of lichens and liverworts, 1200 sheets of mosses, and 15,000 species of flowering plants and ferns. There is also a conservatory 28 x 70 feet.

Chemistry. Samples of rocks, minerals, soils, raw and manufactured fertilizers, foods, milk products, fibers, various other vegetable and animal products, and artificial preparations of mineral and organic compounds.

Entomology. A large and growing collection of insects, both in the adult and in the early stages.

Floriculture. A series of palm, fern, orchid, violet, carnation, and rose greeenhouses.

Geology. A large series of minerals; the state collection of rocks of Massachusetts; a series of Ward's fossils and casts of fossils; models, charts, etc.

Veterinary Science. Skeletons of the horse, cow, sheep, dog, and pig; and a growing collection of anatomical and pathological specimens.

Zoölogy. A museum of over 11,000 specimens designed to show as fully as possible the fauna of Massachusetts, and the principles of zoölogy for teaching purposes. This museum is in charge of C. E. Gordon, curator, and is open free to the public on Saturdays from 1 to 5 and on other week-days from 2.15 to 4.15.

ANDOVER:

ABBOT ACADEMY. John-Esther Gallery.

A small collection of paintings, engravings, bronzes, and other works of art is administered by the trustees and principal of the academy for the benefit of the students and the local public. Both the collections and the building, which was erected in 1905–7 at a cost of $41,000, are the gift by will of Mrs. John Byers of Andover. The gallery is in charge of a curator and janitor and is open to the public every Saturday afternoon from 2 to 5, with an average attendance of 12. Loan collections are exhibited from time to time.

The academy also possesses teaching collections comprising 900± photographs; 600± lantern slides; 400± rocks; 3000± invertebrates, chiefly shells; and 150 birds, chiefly African.

PHILLIPS ACADEMY. Department of American Archaeology.

This department was founded in 1901 by Mr. and Mrs. R. S. Peabody, who provided an endowment of about $187,000 and 40,000 specimens as the nucleus of a museum. The collections now include 74,600 specimens of American archeology and are in charge of Charles Peabody, director, and Warren K. Moorehead, curator, assisted by 2 clerks, 1 messenger, and 1 janitor. There is a library of about 4000 volumes on archeology and history. Public lectures are given during the winter and four archeological bulletins have been issued; "The Stone Age" in two volumes, by W. K. Moorehead, is planned for publication in 1910.

The building occupied by the department and museum was erected in 1903 at a cost of $50,000; it occupies the site of the original Phillips Academy. This is said to be the only preparatory school in the world which has a department of archeology.

BEVERLY:

BEVERLY HISTORICAL SOCIETY.

The recording secretary reports that the society maintains a museum, but no further information has been received.

BOSTON:

BOSTONIAN SOCIETY. Old State House.

This society is organized to promote the study of the history of Boston and the preservation of its antiquities. It maintains in the Old State House a large collection of portraits and historical relics, as well as a library of about 5000 volumes and pamphlets. The financial support of the society consists of the income from invested funds, fees of annual members, and annual grants from the commonwealth of Massachusetts and the city of Boston. The collections are open free to the public on week-days, except holidays, from 9 to 4. In summer the hours are 9 to 4.30 (Saturdays, 9 to 1).

BOSTON SOCIETY OF NATURAL HISTORY. Museum.

STAFF. Curator, Charles W. Johnson; Assistant curator, Joseph A. Cushman; Assistants, L. R. Martin and M. E. Carter.

BOTANY. The C. J. Sprague collection of 2550 North American lichens; 250 specimens from the Cummings, Williams, Earle, and Seymour collections of 700 lichens and fungi; a special New England herbarium of 10,000± specimens; a general herbarium of 50,000± specimens; and an exhibition series of common flowering plants, trees, and shrubs.

GEOLOGY. Minerals, 5150; Rocks, 4000; Relief maps, models, etc., 32.

PALEONTOLOGY. Invertebrates, American, 2600, foreign, 2900, types and figured specimens, 106; Vertebrates, American, 354, foreign, 535, types and figured specimens, 34; Plants, American, 395, foreign, 322, types and figured specimens, 41. There are in addition 9000+ fossils in storage.

ZOÖLOGY. Shells, on exhibition, 3500, in storage, 15,500; Insects, on exhibition, 5000, in storage, 25,000+, types and figured specimens, 150+; Other invertebrates, on exhibition, 1550, in storage, 3000+, types and figured specimens, 50+; Fishes, on exhibition, 400, in storage, 3000+, types and figured specimens, 25+; Batrachians, 250; Reptiles, 500; Birds, on exhibition, 12,000, types and figured specimens, 724; Mammals, 400. The museum collection includes the following New England species: Echinoderms, 33; Mollusks, 350; Crustacea, 150+; Spiders, mites, etc., 250+; Insects, 6500; Fishes, 180; Reptiles and amphibians, 41; Birds, 322; Mammals, 68. There are 8 large and 52 small groups of animals exhibited in natural surroundings.

HISTORICAL SKETCH. The society was founded in 1830 as an outgrowth of the earlier Linnaean Society of New England. It occupied the old Atheneum building on Pearl Street for three years; as a result of the rapid growth of the museum and library a new hall on Tremont Street was then occupied and this too was soon outgrown; in 1847 a building on Mason Street was purchased and in 1863 the present building was erected.

FINANCIAL SUPPORT. By the general funds of the society, which include an annual income of $13,761 from endowment, $1390 from memberships, and $105 from admission fees to the museum.

Building. Erected in 1863 at a cost of $100,000 defrayed by subscription; it affords 19,330 square feet of floor space for exhibition, 3800 for the library, and 2720 for offices, workrooms, etc.

Administration. By a curator, acting under a museum committee, responsible to a board of 24 councilors elected by the society.

Scope. Maintenance of collections of New England fauna and flora, and research.

Library. 35,000 volumes and 27,000 pamphlets on geology, botany, zoölogy, and anthropology. Open to members daily except Sundays, and accessible to others under certain restrictions. It includes sets of journals and transactions of learned societies in all parts of the world, many of which are not available elsewhere in the vicinity of Boston.

Publications. The publications were begun in 1834 and now consist of (1) Memoirs, (2) Proceedings, and (3) Occasional Papers.

Attendance. Open free to the public on Wednesdays and Saturdays from 10 to 4.30, and on Sunday afternoons from 1 to 4.30. On other week-days an admission fee of 25 cents is charged. No statistics of attendance are available.

HARVARD MEDICAL SCHOOL. Warren Anatomical Museum.

The museum comprises 10,000 specimens, illustrating normal, pathological, and comparative anatomy, designed for use in medical instruction and research, and under the care of William F. Whitney, curator, and one preparator. The collection occupies the entire upper half of the administration building with a floor space of 8640 square feet, and is exhibited in alcove cases on the floor and two galleries. It is supported by the income from the Warren Museum fund and the Henry Jackson endowment.

MASSACHUSETTS HISTORICAL SOCIETY.

No reply has been received to repeated requests for information concerning this society, which is said by Thwaites to have been organized in 1791 and to maintain a museum.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY.

Although a museum was originally intended to be a part of the institute, none has ever been organized. The teaching collections, however, include about 10,000 fossils, 10,000 minerals, 8000 rocks and economic specimens, and 2000 specimens in structural geology.

MUSEUM OF FINE ARTS.

STAFF. Director, Arthur Fairbanks; Secretary, Benjamin Ives Gilman; Advisor, Okakura-Kakuzo (Chinese and Japanese art); Head of Egyptian expedition, G. A. Reisner; Honorary curator, Frank G. Macomber (Western art except paintings and textiles); Curators, Emil H. Richter (prints), Arthur Fairbanks (classical art); Associate curators, Francis G. Curtis (Chinese and Japanese art); Assistant curators, Lacey D. Caskey (classical art), Langdon Warner (Chinese and Japanese art); Keepers, Edward S. Morse (Japanese pottery), Francis S. Kershaw (Chinese and Japanese art), John B. Potter (paintings); Docent, L. Earle Rowe; Secretary to director and registrar, Sidney N. Deane; Librarian, Morris Carter; Assistants, J. Arthur McLean (Chinese and Japanese art), L. Earle Rowe (Egyptian art), Florence V. Paull (Western art except paintings and textiles), Sarah G. Flint (textiles), Francis E. Turner (photographs); Assistant librarian, Martha Fenderson; Superintendent of building, W. W. McLean; Assistant superintendent, James F. McCabe; 24 office assistants; 30 superintendent's assistants.

COLLECTIONS. *Egyptian Art*: Sculptures, including royal statues from the Mycerinus Pyramid Temple at Gizeh; smaller objects including cut leather garment of 1350 B. C., gold ornaments, and tiles. *Classical Art*: Sculptures, including Three-sided Relief (5th century), Head of Aphrodite, female head from Chios (4th century), Head of Homer (Hellenistic); terra cottas, including Portrait-Head (Roman); vases; bronzes; coins; and gems, including Marlborough Cameo (Graeco-Roman). *Chinese and Japanese Art*: Sculptures of wood, bronze, marble, and lacquer from the 5th century to the present time; paintings, including the Hokke Mandara (5th century) and the Heiji Monogatari Roll (13th century); early Chinese pottery; Chinese bronze mirrors, swords, and lesser works in sculptured iron, bronze, silver, and gold; lacquers and porcelains. *Western Art*. Paintings: Spanish, Italian, Flemish, Dutch, French, English, and American, including Don Baltazar Carlos and His Dwarf, Velasquez; Slave Ship, Turner; Watson and the Shark, Copley; Athenaeum Heads of George and Martha Washington, Stuart. *Mohammedan Art*: Pottery, including Sears Persian Lustre bowl (13th century), Persian illuminations, rugs, and velvets. *European Art*: Textiles, including Flemish tapestries (15th and early 16th centuries); sculpture, including Head of Ceres by Auguste Rodin; smaller objects, including Paul Revere silver. *Other Collections*: Casts from Greek, Roman, and Italian renaissance sculpture; and a collection of 60,000 prints.

HISTORICAL SKETCH. The museum was incorporated February 3, 1870, to collect and exhibit works of fine art and to give instruction in the fine arts. The first building on Copley Square was opened in 1876, enlarged in 1878 and 1888, and closed May 2, 1909. The present building on the Fenway was opened November 15, 1909.

FINANCIAL SUPPORT. The museum received the following amounts applicable to current expenses during the year 1909 (from May 2 to November 15 the museum was closed): Income from endowment, $48,391.07; annual subscriptions, $23,990; admission fees, $1827.25; sales of catalogs, casts, etc., $1069.91. The expenses were $82,322.93. Additions to the endowment of the museum for maintenance and other purposes amounted to $193,864.02. Contributions for special current purposes amounted to $17,246.88.

BUILDING. The present building was erected in 1907–9, on a lot of twelve acres fronting the Fenway, at a cost of about $2,900,000, of which about $1,200,000 represents the cost of the land and improvements, $1,600,000 the cost of the building, and $100,000 the cost of moving and installation. These expenditures have been defrayed from the proceeds of the sale of the old building, about $1,750,000, contributions from private individuals, about $600,000, and appropriations from the museum endowment, about $500,000. The building is planned as a part of a larger whole, to occupy the entire property, and consisting of the museum proper, a hall of casts, and a school building. The present building, about two-fifths of the future museum proper, contains eight structurally separate departments, the main floor being chiefly devoted to exhibitions historically arranged, and the ground floor to reserve collections accessible to all visitors, and to study and administration rooms, both floors being abundantly lighted, mostly by high windows. The building affords 94,882 square feet of floor space for primary exhibition purposes, and 82,437 for reserve collections, offices, workrooms, etc.

ADMINISTRATION. By a board of trustees, including representatives of Harvard University and other institutions, the city, and the state, acting through an executive committee whose chairman and administrative officer is the director of the museum. There are also visiting and advisory committees of citizens.

SCOPE. The purposes of the museum are (1) to preserve works of art in a special building from destruction and oblivion; (2) to impart knowledge and skill in the field of fine art.

The museum seeks to attain the first purpose by securing in its building the best conditions of safety; further by providing exhibition galleries in which each object is shown to the best possible advantage; by stimulating public interest through alternative exhibitions drawn from collections held in reserve; and by promoting public understanding of the objects shown through their oral as well as printed interpretation. The methods of oral interpretation employed include gallery conferences by officers of the museum and other competent persons on objects shown at the time; the assignment of these and other speakers under the title of Docent to the duty of meeting visitors singly or in groups in the galleries to give information about the exhibits. Printed aids to understanding the collections include, beside the publications of the museum and photographs sold at the door, lists of objects relating to historical periods, and loan collections of photographs and lantern slides, both offered to teachers, and half-tones and postal cards illustrating museum objects offered to school children and the public.

The museum seeks to attain the second purposé by providing reserve galleries in which each object can be studied to the best advantage; by offering special students opportunities for work in the department offices; by publishing catalogs of permanent value; by arranging courses of lectures entitling to college credit on subjects germane to the collections; by maintaining a public inventory of works of art outside the museum interesting and accessible to the Boston public, under the title of a Register of Local Art; and by giving the best instruction possible in the arts of drawing, painting, modeling, and designing in the school of the museum. The school, now occupying a separate building on the museum property, succeeds independent classes permitted in 1876 the use of unoccupied rooms in the first building. It offers a number of scholarships and prizes. The pupils number about 250 annually.

Library. 13,074 volumes, 958 pamphlets, and 30,824 photographs; all chosen with special reference to the museum collections and intended for the use of both staff and public.

Publications. (1) Bulletin, published bi-monthly. (2) Annual Report, published in March. (3) A handbook and other volumes illustrating the collections, including catalogs of Greek and Roman casts, Italian renaissance sculpture, Greek coins, early American engraving, American silver, Japanese sword guards, Japanese pottery, and Chinese pottery.

Attendance. Open daily, except Fourth of July, Thanksgiving, and Christmas; on week-days from 9 to 5 (November to March, 9 to 4), Sundays from 1 to 5. Admission is free on Saturdays, Sundays, and public holidays; on other days an entrance fee of 25 cents is charged. In 1908 there were 18,849 paid admissions and 218,025 free admissions.

OLD SOUTH ASSOCIATION. Old South Meeting House.

STAFF. Custodian, Mrs. S. C. Libby.

COLLECTIONS. The Warren collection of relics relating to Dr. Warren and Bunker Hill, lent by Dr. Warren's family; a considerable number of relics of Washington of the highest importance and authenticity, lent by the Augustus Hemenway trustees; a substantially complete set of furniture and articles of domestic use of the colonial period; and a large and varied collection of other objects of historical interest.

HISTORICAL SKETCH. The Old South Association was incorporated in 1876 for the permanent preservation of the historic building from which it derives its name. The present collection was formed at the time by a committee of ladies from various sources and the admission fees were a portion of the resources from which the Old South was saved and thereafter kept open.

FINANCIAL SUPPORT. By admission fees, supplemented by other revenues of the corporation.

BUILDING. The site of the Old South Meeting House has been continuously occupied by a church building for a longer time than any other ground in Boston. The present building was erected in 1729. After a long and intimate association with local historical events it was sold in 1876 that the lot might be used for business purposes. The Old South Association, organized at this time, rescued it from destruction by purchasing the lot and building at a cost of $400,000. The building occupies about 10,000 square feet of land.

SCOPE. The primary purpose of the association is the preservation of the Old South Meeting House; the maintenance of the museum is incidental to this. Under the name of "Directors of the Old South Work," with the assistance of a trust fund from the estate of the late Mary Hemenway, the corporation carries on a considerable educational work in early American history, including summer lectures for school children and the publications described below.

PUBLICATIONS. A series of reprints of important original papers, accompanied by useful historical and bibliographical notes, is issued under the title Old South Leaflets, with the object of interesting young people in American history and politics. Of these leaflets, 202 have been published up to June, 1910, consisting of about 16 pages each, sold at 5 cents per copy, or $4 per hundred. These are extensively used for class work in schools and colleges throughout the United States.

Attendance. Open to the public on payment of a fee of 25 cents on week-days from 9 to 5. The attendance during 1909 was 11,140.

CAMBRIDGE:

CAMBRIDGE HISTORICAL SOCIETY. (Public Library.)

This society was organized in 1905 and has received by gift and exchange a number of books and pamphlets of historical interest and a few articles as the nucleus of a historical museum. The society has published annual Proceedings since 1906. The collections are in charge of Clarence Walter Ayer, curator.

HARVARD UNIVERSITY.

The University Museum includes the Peabody Museum of American Archaeology and Ethnology; the Botanical, Geological, and Mineralogical museums; and the Museum of Comparative Zoölogy. The museum of the Department of Architecture, the William Hayes Fogg Art Museum, the Botanical Garden, the Collection of Classical Antiquities, the Germanic Museum, the Gray Herbarium, the Semitic Museum, and the Social Museum are separate institutions responsible independently to the president and fellows of Harvard University. The museum of the Harvard Medical School is listed separately under Boston.

HARVARD UNIVERSITY. Peabody Museum of American Archaeology and Ethnology (Anthropological Section of the University Museum).

Staff. Honorary curator in charge, Frederic W. Putnam; Assistant curator, Charles C. Willoughby; Librarian and assistant in ethnology, Roland B. Dixon; Assistant and secretary, Frances H. Mead; Assistants, Jane Smith, Zelia Nuttall (Mexican archeology), William C. Farabee (somatology), Alfred M. Tozzer (Central American archeology), Charles Peabody (European archeology), Richard F. Carroll (library); Thaw fellow and assistant in ethnology, Alice C. Fletcher; 1 fireman and janitor, and 2 caretakers.

Collections. The museum is especially rich in rare old ethnological material pertaining to the North American Indians. By persistant efforts to bring together in the Peabody Museum the ethnological material in older institutions in Boston and vicinity, it has been made the depository of invaluable collections from the Boston Marine Society, the Massachusetts Historical Society, the Boston Atheneum, the Boston Society of Natural History, the American Antiquarian Society, the American Academy of Arts and Sciences, and the old Boston Museum. In the collections from the old Boston Museum are a number of specimens that were once in the famous Peale Museum of Philadelphia, including several from the Lewis and Clark Expedition. The museum has also a few specimens collected by Catlin. A Massachusetts Indian bow, the only one in existence, dating from 1865, was received from the American Antiquarian Society. The museum has been constantly receiving additions from individual patrons. In the tribal exhibits are many old Indian baskets that are especially fine.

The order of exhibits is as follows: on the first floor, Mississippi Valley archeology and North American ethnology; on the second floor, Old World archeology and North American archeology and ethnology; on the third floor, South American archeology and ethnology, and North American, Mexican, and Central American archeology; on the fourth floor, ethnology of South America, Africa, Borneo, and the Pacific Islands, and Mexican and Central American archeology; on the fifth floor, human skeletons and crania, and the Pueblo collections.

In the arrangement of exhibits the primary object is to furnish the means for comparative study and thus to make the collections of importance to students, as well as of educational interest to the general public. The geographical and ethnographical system has been followed, so that the student has certain naturally limited groups to study and to compare both in archeology and ethnology. These groups are made as complete as possible in order to present as a whole the archeology of a special region, or the customs, arts, and costumes of each tribe or people represented. In this way all that is possible to glean of the life history of past and present peoples from specimens of their handiwork and from exemplification of their achievements is shown in the various exhibits. The story of man's past and of his condition in savagery, in barbarism, and in the beginnings of civilization is illustrated. In the somatological collections the opportunity is afforded for a comparative study of the physical characteristics of the various races.

Historical Sketch. In 1866 George Peabody gave $150,000 for the foundation of a museum of American archeology and ethnology and for a professorship for the teaching of these subjects. The extensive explorations carried on by the museum and other circumstances have resulted in its becoming at present a museum of general anthropology.

Financial Support. The original Peabody endowment of $150,000 was divided into three funds: a building fund of $60,000, a collection fund of $45,000, and a professorship fund of $45,000. The following endowments have since been established: the Thaw fellowship of $30,000, the Hemenway fellowship of $10,000, the Winthrop scholarship of $5000, the Huntington Frothingham Wolcott fund of $20,000, the Henry C. Warren fund of $10,000, and the Susan C. Warren fund of $5000. For the past three years a fellowship in Central American archeology has been maintained by a friend of the museum. Other gifts for various purposes are received each year.

Building. In 1877 the first section of the present fireproof building on Divinity Avenue was erected. In 1889 the second portion of the building was erected, forming one-half of the structure planned for the southern wing of the university museum. The completion is required for the proper exhibition of the collections.

Scope. Exploration and research, and university teaching. The museum is especially noted for its many and thorough explorations, especially of the shellheaps and village sites of the Atlantic states, and the burial places, village sites, mounds, and earthworks of the Ohio Valley; for its long continued researches in the Delaware Valley; and for its expeditions to Central and South America.

Library. 3847 volumes and 3960 pamphlets covering all branches of anthropology and especially rich in complete sets of the anthropological series of publications of the world.

Publications. (1) Annual reports; (2) Papers; (3) Memoirs; (4) Special publications.

Attendance. Open free to the public on week-days, except holidays, from 9 to 5.

HARVARD UNIVERSITY. Botanical Section of the University Museum.

No reply has been received to requests for information regarding the collections of this department, which include extensive cryptogamic herbaria; economic exhibits; the Ware collection of Blaschka glass models of plants and flowers; etc.

HARVARD UNIVERSITY. Geological Section of the University Museum.

This section, for which three rooms are provided, is as yet incomplete. The more noteworthy objects at present include the Curtis geographical model of Boston and vicinity; a model of the Dents du Midi by students of Professor Heim; a collection of relics from St. Pierre, Martinique; etc.

In addition to the above, the Gardner collection includes over 5700 photographs and 5400 lantern slides intended for instruction and exhibition. This collection is maintained and increased by the income of a fund established for this purpose in 1880 by George A. Gardner, Esq., of Boston. It is in charge of Edward Wigglesworth, curator.

HARVARD UNIVERSITY. Mineralogical Section of the University Museum.

The exhibition collections comprise about 10,000 minerals arranged to illustrate systematic mineralogy and the physical properties of minerals and crystals and their occurrence, and a large collection of meteorites. The study series comprises a large stock of minerals and rocks.

HARVARD UNIVERSITY. Museum of Comparative Zoölogy (Zoölogical Section of the University Museum).

Staff. Curator, Samuel Henshaw; Assistants, Walter Faxon (in charge of crustacea and mollusca), Samuel Garman (herpetology and ichthyology), William Brewster (in charge of birds), W. McM. Woodworth (in charge of worms), Charles R. Eastman (vertebrate paleontology), Outram Bangs (in charge of mammals), Hubert L. Clark and Henry B. Bigelow (invertebrate zoölogy), Robert W. Sayles (in charge of the geological exhibition collections); Librarian emerita, Frances M. Slack; Artist, Magnus Westergreen; Preparator, George Nelson.

Zoölogy. The exhibition space is devoted to systematic collections of typical animals, to special collections, and to faunal collections illustrating geographic distribution throughout the world. The study series contains the greater part of the collections. No information is available as to the extent of the collections.

Historical Sketch. The museum had its origin in the zoölogical collections accumulated by Professor Louis Agassiz, which were purchased in 1852 for Harvard College at a cost of $12,000, raised by private subscriptions. In 1858 the corporation of Harvard University made a small monthly allowance for the care of the collection. In 1859 Professor Agassiz obtained a grant from the legislature of Massachusetts of $100,000, and at the same time $71,125 was raised by private subscription for the museum. The museum was incorporated in 1859, and received through Mr. William Gray the sum of

$50,000 left to him by Mr. Francis C. Gray for the establishment of a museum, to be under the charge of an independent faculty, responsible only to the corporation and overseers of Harvard University. Harvard granted to the museum the land it now occupies, and the construction of the building was begun in 1859. In addition to its initial grant of $100,000, which was paid in three years (1861, 1863, and 1864) the legislature of Massachusetts has paid to the museum the sum of $193,500.

Financial Support. By the income from an endowment of about $600,000.

Building. Various portions of the building have been erected in 1859–60, 1871–72, 1877, 1880–82, 1888–89, and 1901–02. The building with its collections and libraries represents an outlay of more than $1,225,000.

Administration. By a curator, responsible to a museum faculty.

Scope. Research and exploration. Facilities for instruction in zoölogy and geology are provided for students in Harvard University, and exhibiton collections for the use of the public.

Library. About 46,000 volumes.

Publications. (1) Annual reports; (2) Bulletin, of which 51 volumes had been issued at the end of 1909; (3) Memoirs, of which 30 volumes have been published. These publications are issued at irregular intervals, one volume of the Bulletin and a half volume of the Memoirs usually appearing annually. They are devoted to the publication of original work by the staff and of investigations carried on by students and others in the laboratories, or by specialists on the museum collections.

Attendance. The exhibition collections of the museum are open free to the public on week-days, except Christmas and Fourth of July, from 9 to 5, and on Sundays from 1 to 5.

HARVARD UNIVERSITY. Department of Architecture.

This department is housed in Nelson Robinson Jr. Hall, which contains on the ground floor a Hall of Casts, running through two stories. It contains a number of full-size models of details from important architectural monuments; a remarkably fine series of casts from Greek architectural detail, made for the department in Athens and including several casts from objects never hitherto reproduced; an important series of original fragments, chiefly marble, of Greek, Roman, and Italian renaissance detail; and valuable loan collections of oriental embroideries, textiles, prints, architectural drawings, etc. The library comprises over 1000 bound volumes, besides 245 portfolios containing mounted plates, and more than 12,000 photographs. The collections are in charge of H. Langford Warren, head of the department.

HARVARD UNIVERSITY. William Hayes Fogg Art Museum.

STAFF. Director, E. W. Forbes; Custodian of engravings, Laura H. Dudley; Custodian of photographs, Eliza P. Huntington; Assistant, Alice M. Wood; 1 janitor and 1 page.

ART. Sculpture, 15 marbles, Greek, Roman, and renaissance, and 150± casts; Engravings, 30,000±; Paintings, 23 primitives, 22 early American school; Water color drawings of early English school, including 12 of J. M. W. Turner; Ceramics, ancient Greek vases, and Arretine pottery; Photographs, 42,000±; Lantern slides, 3855. Among special collections may be mentioned electrotypes of the British Museum collection of Greek and Roman coins, a collection of early pencil drawings of J. M. W. Turner, bronze reproductions of Italian and French medals of the renaissance, the Loeb collection of ancient bronzes, vases, gold ornaments, and engraved gems, and a small Japanese loan collection.

HISTORICAL SKETCH. The museum was founded by Mrs. Elizabeth Fogg of New York in memory of her husband. Mrs. Fogg bequeathed to the president and fellows of Harvard University the sum of $220,000 for this purpose.

FINANCIAL SUPPORT. The museum receives annually from the Fogg endowment, $2400±; from the Gray fund for engravings and their care, $800±; from the Prichard fund, $850±; from the Randall fund, $1750±; and from the Searle fund for books, $100±.

BUILDING. A fireproof structure erected in 1895 at a cost of $150,000, derived from the principal of the Fogg bequest. It provides 9100 square feet of floor space for exhibition, and 500 for offices, workrooms, etc., in addition to a basement room and a lecture room seating about 500 persons.

ADMINISTRATION. By a director, appointed by the corporation and the board of overseers of Harvard University.

SCOPE. Primarily, college teaching; secondarily, public instruction.

LIBRARY. 1000± reference volumes for use of the staff and qualified students. The museum library is largely supplemented by the general university library.

PUBLICATIONS. (1) Annual reports; (2) Catalogs, handbooks and guides to special collections.

Attendance. Free on week-days from 9 to 5 and on Sundays during term time from 1 to 5. There are no statistics of general visitors, but 1201 persons visited the photograph collection for purposes of study in the year 1908–9.

HARVARD UNIVERSITY. Botanical Garden.

No reply has been received to requests for information concerning this department.

HARVARD UNIVERSITY. Collection of Classical Antiquities.

This collection is in charge of Professor George Henry Chase, curator, and is intended primarily to serve as illustrative material for the courses in archeology and antiquity. It consists of several hundred objects of minor art, such as bronzes, vases, and coins, as well as specimens of marble, bricks, and other building materials, fragments of mozaic, inscriptions, etc. With these are a few casts of ancient sculpture, a considerable collection of photographs (principally of places in Greece and Italy), several hundred squeezes and rubbings of inscriptions, and a number of models of ancient utensils. The objects in the collection are always at the disposal of the students and can be taken out, if necessary, for study and comparison with similar collections in Boston and Cambridge.

HARVARD UNIVERSITY. Germanic Museum.

The museum is in charge of Kuno Francke, curator. It was established in 1902, at the instigation of Professor Francke, through collections undertaken by the visiting board of the Germanic department and by the Germanic Museum Association; but its present status is largely due to important donations received from the German Emperor, the King of Saxony, and a committee of leading German scholars, artists, and men of affairs at Berlin. The Swiss government also, as well as the municipal government of the city of Muremburg, has given valuable aid.

The aim of the museum is to give a historical conspectus of the development of Germanic culture as represented by the fine arts and the crafts. The present collection, apart from a large number of photographs of German architectural and sculptural monuments, chiefly from the Königlich Preussische Messbildanstalt, contains models and reproductions of representative works of German art from the 5th to the 18th century. The collection of casts of medieval and renaissance sculpture contained in this museum is more comprehensive than that of any other museum devoted to German art.

The museum is temporarily installed in the old gymnasium of Harvard University. About $190,000 has been collected for a new building.

The museum is open free to the public on Mondays, Fridays, and Saturdays from 9 to 5, and on Thursdays and Sundays from 1 to 5.

HARVARD UNIVERSITY. Gray Herbarium.

The Gray Herbarium comprises over 438,000 herbarium sheets of flowering plants, and a library of over 20,000 books and pamphlets relating to systematic botany. The staff is as follows: Curator and professor of systematic botany, B. L. Robinson; Collector, C. G. Pringle; Assistant professor, M. L. Fernald; Librarian, Mary A. Day; Assistants, Edith M. Vincent and Isabel W. Anderson. The financial support consists of the income from invested funds, gifts for present use, and royalties on and sale of publications. The institution is open to the public during the working hours of the staff, but as there are no exhibits it is seldom visited except for scientific purposes.

HARVARD UNIVERSITY. Semitic Museum.

STAFF. Curator, David G. Lyon; Curator of Arabic manuscripts, John Orne; 1 janitor.

ART. Plaster casts of bas-reliefs and other carvings of Assyria, Babylonia, and other Semitic lands.

BOTANY. Specimens of pressed flowers, woods, seeds, and fruits of Palestine.

GEOLOGY. Geological specimens from Syria and Palestine.

ZOÖLOGY. Birds of Palestine, 200±; Mammals of Palestine, 40.

OTHER DEPARTMENTS. Hebrew, Arabic, Syriac, Ethiopic, Samaritan, and other manuscripts; Greek papyri; coins from Palestine, or relating to Palestine; cuneiform inscriptions from Assyria and Babylonia; ancient vases and glass from Syria and Palestine; articles illustrating present customs and usages in Semitic lands; and original objects and reproductions from Egypt and Persia illustrating Semitic history.

HISTORICAL SKETCH. Founded in 1889 by a gift of $10,000 from Jacob H. Schiff, who also gave the building. The museum was opened to the public in 1891 and occupied a room in the Peabody Museum until the erection of the new building in 1902. Mr. Schiff and other friends have contributed about $40,000 more toward the purchase of material. Mr. Schiff has also given $65,000 for explorations in Palestine under the auspices of the museum.

Financial Support. Purchases are made from special contributions of friends; other expenses are met by the university. There is no endowment.

Building. Erected in 1902 at a cost of about $80,000 given by Mr. Schiff. It provides about 8000 square feet of floor space for exhibition, and about 5000 for offices, workrooms, etc.

Administration. By a curator acting with a committee, responsible to the president and fellows of Harvard University.

Scope. Primarily, exploration and college teaching; secondarily, public instruction.

Library. About 1500 volumes on Semitic subjects intended for the use of instructors and students.

Attendance. Open free to the public on week-days from 9 to 5.

HARVARD UNIVERSITY. Social Museum.

The Social Museum was begun in 1903 for the purpose of promoting investigation of modern social conditions, and directing the amelioration of industrial and social life by means of graphical illustration of progress in various countries. The collections comprise photographs, models, diagrams, and charts. Among them may be mentioned an exhibit, made at the St. Louis Exposition by the German government of the workingmen's insurance system; and by German industrial establishments concerned with the welfare of their working people; exhibits from France, Belgium, Italy, and Japan, illustrating municipal progress, improved dwellings, and philanthropic institutions; a duplicate of the exhibit of the United States bureau of statistics of labor concerning wages, strikes, and trade-unions; an exhibit representing the English coöperative movement; an exhibit illustrating social settlements; charts representing life-insurance statistics; illustrations of welfare-work in American industries; photographic collections illustrating charity, industrial methods, immigration, improved housing, prison reform, etc. The museum occupies two rooms in Emerson Hall and in conjunction with the library of 3000 volumes affords the student much material for study and research.

CHARLESTOWN:

UNITED STATES NAVY YARD. Museum.

The navy yard maintains a museum and library occupying 3000 square feet of floor space and comprising extensive collections of models and pictures; Chinese and South Sea Island weapons of war; and minerals and shells. The library contains about 4000 volumes of naval and scientific literature and a miscellaneous collection of magazines. The museum is in charge of a naval officer with title of curator, responsible to the commandant. The object of the library and museum is to form a collection of works on naval literature and science; to supply a place of deposit for paintings, engravings, maps, and charts, for cabinets of curiosities of natural history, and for models of naval architecture and machinery connected with the naval profession; and to afford means of exhibiting and preserving specimens of useful inventions in the arts and sciences which relate to navigation and nautical defense. All books and specimens are donated; there is no financial support. The museum and library are open on week-days from 9 to 12 and 1 to 4, except on Saturday afternoons during July, August, and September. The attendance is estimated at about 15,000 a year.

CLINTON:

CLINTON HISTORICAL SOCIETY.

The society possesses a small collection of articles illustrating the early history of the town and vicinity, and open to the public in the Holder Memorial building on week-days from 1.30 to 4.

DANVERS:

DANVERS HISTORICAL SOCIETY.

This society at present occupies about 1250 square feet of floor space on the second floor of the First National Bank building, where it maintains a museum, in charge of Henry N. Comey, curator, and Sarah W. Mudge, assistant curator. The collections include weapons and military accoutrements; a large assortment of rare old china; coins and medals; manuscripts; autographs; documents relating to the early shoe trade and other trades in New England; pictures, etc. The most valuable single collection is a series of guns, pistols, uniforms, swords, saddles, commissions, medals, etc., owned by the late Francis Dodge, paymaster-general of the United States, and given to the society by his widow. There is also a historical library of about 2500 books.

The financial support of the society is derived from dues of members and from voluntary contributions. The latter have been sufficient for the purchase of a lot of land and to form a substantial nucleus for a building fund. The society's rooms are open to the public on Saturdays from 2 to 5. During the winter at least one lecture a month is given and papers are also read at the quarterly and annual meetings.

DEERFIELD:

POCUMTUCK VALLEY MEMORIAL ASSOCIATION. Memorial Hall.

The collection of historical relics in Memorial Hall comprises approximately 35,000 articles, related for the most part to local history. One of the most interesting relics is the door of an old house, bearing the marks of an assault upon the town by Indians in 1704.

Memorial Hall was erected in 1798 by the corporation of Deerfield Academy, and still contains specimens from the academy museum established in 1799. The museum is in charge of George Sheldon, curator, and is maintained by the Pocumtuck Valley Memorial Association chartered in 1870. The association has published 4 volumes of original matter, in addition to a catalog of its collections and a two-volume history of Deerfield.

The museum is open to the public on week-days, from April to December, from 9 to 12 and 1 to 5. An admission fee of 10 cents is charged, and the number of visitors in 1909 was 7010.

FITCHBURG:

FITCHBURG HISTORICAL SOCIETY.

The society has a small collection of historical relics but is unable to develop a museum at present because of lack of suitable rooms.

FITCHBURG PUBLIC LIBRARY.

The library maintains a museum in charge of George E. Nutting, librarian, containing the following collections: a room well filled with historical relics; an art gallery, containing oil paintings, statuary, and photographic reproductions from the art galleries of Europe; and 800 mounted birds and mammals.

GLOUCESTER:

CAPE ANN SCIENTIFIC AND LITERARY ASSOCIATION.

This association has a collection of local Indian implements; historical papers and documents of local interest; about 200 botanical specimens; 1000 minerals; something over 200 shells and about 500 other zoölogical specimens, including fishes and marine invertebrates found off Cape Ann.

GREENFIELD:

HISTORICAL SOCIETY OF GREENFIELD.

This society was organized in June, 1908, and now has about 100 members who pay an entrance fee of $3 and an annual fee of $2. It has also received from the late Mr. Edward Benton a bequest of $5000, together with his library, china, Indian relics, old furniture, etc. It is the aim of the society to maintain local historical collections and it rents three rooms which are now well filled with portraits and other pictures, old-fashioned implements and furniture, and several hundred books and valuable papers. The rooms are open once a month in winter, and on every Saturday afternoon in summer from 3 to 6.

HAVERHILL:

HAVERHILL HISTORICAL SOCIETY. (240 Water Street.)

The society includes about 400 members and owns and occupies the Buttonwoods mansion, in which is a large exhibition room of fire-proof construction, filled with a constantly increasing collection of curios and relics of local historical interest. On the grounds and near the main building is the first frame house built in Haverhill, dating from about 1640.

IPSWICH:

IPSWICH HISTORICAL SOCIETY.

This society owns a 17th century dwelling, well restored in the old manner and containing a museum of old furniture, historical relics, etc., and a library of about 2000 volumes. The society derives its income from a membership of about 300, but has no endowment.

LANCASTER:

THAYER MUSEUM.

This museum is confined to ornithology and has been gathered by Mr. John E. Thayer at a cost of over $100,000. It contains one of the most complete collections of mounted birds of North America in the world, and over 15,000 skins, with nests and eggs of nearly every North American species. The collection includes a great auk, and 7 eggs of this species; a fine specimen of the male Labrador duck, and hundreds of other rare birds. There are 3 large and 26 small groups of birds exhibited in natural surroundings.

The museum is supported by the owner, and is open free to the public on Mondays, Wednesdays, and Saturdays from 8 to 5.

LEOMINSTER:

LEOMINSTER PUBLIC LIBRARY.

The library maintains a museum for the encouragement of interest in literature, art, natural science, and local history, established in

1872 and reorganized in 1910 in a new library building given by Mr. Andrew Carnegie. The collections include prints and engravings of local interest, local portraits in oil, old-time articles of domestic use and manufacture, a few specimens of early local textiles, a small collection of shells, a large collection of birds, a few mammals, a good herbarium, and a collection of minerals. The museum is in charge of E. G. Davis, curator, and is open free to the public during library hours.

LEXINGTON:

LEXINGTON HISTORICAL SOCIETY. Hancock Clark House.

Staff. Custodian and caretaker, Mrs. Ellen B. Lane.

Collections. The museum includes many prints and engravings, a small number of oil paintings and water colors, pamphlets, manuscripts, household articles and clothing of former generations, and other material relating to local history. The collection now numbers over 1000 items, and a fireproof vault is provided for the more valuable articles.

Historical Sketch. The society was organized by Rev. E. G. Porter at the time of the centennial of the battle of Lexington, 1875, and its museum has grown constantly since that time.

Financial Support. The society has funds and property to the value of about $25,000; also a fund of $10,000, the income of which is devoted to historical research relative to the revolutionary period. The house and collection are maintained by voluntary contributions from visitors.

Building. The house was built in 1698 by Rev. John Hancock and was used as a parsonage at the time of the revolution. Samuel Adams and John Hancock were staying here when Paul Revere gave the alarm of the approach of the British, April 19, 1775. The house provides a total floor space of about 1500 square feet.

Administration. By a custodian and committee responsible to the society.

Scope. Preservation of historical records and material, and the promotion of the study of local history.

Library. A fairly extensive historical library is maintained for the use of both staff and public.

Publications. The society has published 3 volumes of Proceedings composed entirely of local history; a volume of epitaphs and inscriptions from the old cemeteries of the town, and a handbook of Lexington. A new history of Lexington in two volumes is now in preparation.

ATTENDANCE. Open free to the public every day in the year, as follows: April 1–December 1, from 9.30 to 6; other months from 11 to 4. It is visited by over 15,000 persons annually.

LOWELL:

LOWELL HISTORICAL SOCIETY.

The society maintains in its rooms in Memorial Hall collections of Indian relics, minerals, and articles of historical interest, as well as a library of about 700 volumes and as many pamphlets. It publishes occasional volumes of Contributions. This society is the successor of The Old Residence Historical Association of Lowell, which was a voluntary association organized in 1868. The Lowell Historical Society was incorporated in 1902 for the purpose of collecting and preserving books, manuscripts, records, and objects of antiquarian and historical interest; of encouraging the study of local history; of maintaining a library; and of publishing, from time to time, whatever may illustrate and perpetuate the history of Lowell and adjacent towns.

LYNN:

LYNN HISTORICAL SOCIETY.

This society was organized about fifteen years ago and has made a collection of objects of local historical interest, now several hundred in number and including furniture, tools of trade, china and glass, paintings and photographs of buildings in Lynn and vicinity, etc. These collections occupy a room about 40 x 20 feet, and are in charge of a board of custodians, of which William S. Burrill is chairman.

MARBLEHEAD:

MARBLEHEAD HISTORICAL SOCIETY.

The society maintains an extensive collection of local historical material; including articles of industry; household utensils and wearing apparel; 50 prints and engravings; 75 oil paintings, mostly portraits; and 30 water colors. There is also a small and unclassified collection of shells. The museum is supported by the membership fees of the society and by admission fees; it occupies about 5000 square feet of floor space in a building erected in 1768.

MARLBOROUGH:

MARLBOROUGH SOCIETY OF NATURAL HISTORY.

The society maintains a collection of minerals, shells, corals, birds, objects of historical interest, and articles of Japanese manufacture, occupying about 1836 square feet of floor space in a building valued at $3500. The museum is in charge of Joel W. Giles, curator, and is open free to the public on the third Thursday of every month from 2.30 to 7.30. The average attendance is 20.

MEDFORD:

MEDFORD HISTORICAL SOCIETY.

This society, organized in 1896, possesses antiquarian collections of local interest, including rare books and manuscripts, prints, portraits, articles connected with Medford's ship-building industry, the Brooks collection of Indian relics, the Chandler collection of civil war relics and others. These are housed in the home of the society, the old Francis Home, built about 1780, and are in charge of the curator, Agnes W. Lincoln. The society also has a library of about 1000 volumes, and publishes a quarterly, the "Medford Historical Register."

METHUEN:

METHUEN HISTORICAL SOCIETY.

The society has a small collection of local historical material.

NANTUCKET:

NANTUCKET HISTORICAL ASSOCIATION.

This association was organized in 1894 and occupies two buildings, one of which is a fireproof concrete structure, affording a floor space of about 1500 square feet for the display of a large collection of objects of local historical interest. The museum includes a large collection of furniture and household effects, some of which are about 200 years old; a large collection of portraits; a very fine collection of articles relating to the whale fishery, which was an important industry of the island from 1690 to 1865; and a large collection of old manuscripts and deeds, some of which were executed by the Indians and given to the early settlers—the first deed on record bearing the date October 13, 1641. The whaling ships frequently visited the Pacific and Indian oceans and the museum contains many relics of these cruises.

The association has a membership of 320 and owns property, aside from its exhibits, to the value of $17,000. Its income is about $1200 a year, derived from interest on invested funds, admission fees, membership dues, and donations. The museum is in charge of Susan E. Brock, curator and librarian, and is open to visitors from June 15 to September 15. The attendance is 2000–3000 annually.

NEW BEDFORD:

OLD DARTMOUTH HISTORICAL SOCIETY.

The society was established in 1903 and occupies about 4000 square feet of floor space for exhibition, and 1000 for offices, etc. in a building erected in 1884 but not occupied until 1906, when it was given to the society by Mr. Henry H. Rogers. The primary purposes of the society are research and the maintenance of local collections, including collections devoted to the life and work of the Indians and of the early settlers of the vicinity; prints, engravings, paintings, photographs, etc., illustrating the whaling industry and local history; and collections of ceramics, textiles, etc., illustrating the colonial period.

The museum is in charge of William A. Wing, secretary, and is open on Wednesday and Saturday from 10 to 1 and on Tuesday, Thursday, and Saturday from 2 to 5. Admission is free to members of the society, of which there are about 800; to others an admission fee of 25 cents is charged. The schools come to the museum class by class to view the collections and to hear short talks on the early history of the vicinity, as a basis for compositions on local historical subjects. The society has a small library of local historical material, and issues quarterly publications, of which there are 27 to the end of 1909.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 2 acres, established in 1892, containing 100 birds and 112 mammals.

NEWBURYPORT:

HISTORICAL SOCIETY OF OLD NEWBURY.

This society maintains historical collections, including those formerly belonging to the Newburyport Marine Society, in a wooden building at the corner of High and Winter Streets.

NEWTON:

ZOÖLOGICAL PARK.

This zoölogical park of 12 acres was established in 1897 and contains 35 birds and 100 mammals.

NORTHAMPTON:

SMITH COLLEGE.

The department of geology maintains in Seelye Hall a collection including about 1800 minerals on exhibition and 2000 in storage; 2000 rocks in storage; a series of specimens of dynamic geology, maps, relief maps, globes, models, etc.; about 1800 invertebrate fossils on exhibition, with especially good collections of trilobites, brachiopods, and cretaceous cephalopods, and about 500 specimens in storage. These collections are open free to the public daily.

The department of zoölogy maintains for teaching purposes a synoptic collection of about 3000 invertebrates, a series of 400 skeletal parts and dissections, and newly started biological and anthropological collections of about 150 specimens each.

The department of botany has small teaching collections only.

SMITH COLLEGE. Hillyer Art Gallery.

The Hillyer Art Gallery was built by Mr. Winthrop Hillyer of Northampton, who left a fund of $50,000, of which the income is spent on the collections or in whatever way may increase the helpfulness of the gallery or of the art department of the college. A supplementary sum of $15,000 from Mr. Hillyer's estate will ultimately be received and will be spent on an addition to the exhibition rooms. A student of the college has given money to build a large lecture room, reading room, and offices in connection with the present building and upon the completion of this addition it is expected that the books on art subjects, to the number of about 500 volumes now in the general library of the college, may be transferred to the reading room. The present building affords 8072 square feet of floor space for exhibition. The collections comprise 105 paintings almost wholly by American artists; a series of casts; 145 framed Arundel prints; about 200 photographs 14 x 18 inches, and about 1200 smaller ones; and about 3000 lantern slides. The gallery is in charge of the staff of the art department of the college, with the assistance of 5 custodians, and is open free to students of the college on week-days from 9 to 1 and from 2 to 4. To the public an admission fee of 25 cents is charged except on Wednesday and Saturday afternoons, when admission is free.

PEABODY:

PEABODY HISTORICAL SOCIETY.

This society was organized in 1896, and occupies two rooms in the Warren National Bank building in Peabody Square, where it maintains a museum comprising about 3700 articles and books of local historical interest. There are special collections of local pottery. The society has also copied every gravestone inscription and Bible record found in the town. The town of Peabody was known as South Danvers from 1855 to 1868, having been separated from the town of

Danvers, which in turn was separated from the town of Salem in 1752. Upon petition of the society the town records from 1752 to 1855 were copied. The society has also placed tablets for soldiers killed in the battle of Lexington, also at the house where George Peabody was born, and near the house of John Procter, the witchcraft martyr. The society has published various reports, pamphlets, postcards, and photographs relating to its work or to local historical subjects.

PITTSFIELD:

BERKSHIRE ATHENÆUM AND MUSEUM. Museum of Natural History and Art.

Staff. Curator, Harlan H. Ballard; Assistant curator, Annie Crossman; 1 janitor.

Anthropology. Uncivilized peoples: Archeology, native, 1000±; Ethnology, native, 500±, foreign, 500±. Civilized peoples, ancient, an extensive collection.

Art. Original sculpture in marble, including Rebecca, by Belzoni; Lost Pleiad, by Rogers; Judith, by Tadolini; Faun and Cupid, by an unknown Italian of the 16th century. There are also casts of Egyptian, Greek, and Roman antiques; 500± prints and engravings; 100± oil paintings; and a general collection, including a few water colors, ceramics, textiles, glass, and Greek and Roman gold ornaments. Among the more notable single exhibits are the original life mask of Lincoln; a Greek wreath of gold; and one of the sledges which Commander Peary took to the North Pole.

Geology. Minerals, on exhibition, 2000±, in storage, 1000. There are also a few rocks, relief maps, models, etc.

History. Historical relics of Berkshire County, 1000±; Autographs and book plates, 500±; Coins and medals, 2000±.

Paleontology. Invertebrates, 500±; Plants, 50±. There are also a few small vertebrate fossils.

Zoölogy. Shells, 1000±, chiefly the Bidwell collection; Insects, 1000±; Birds, 1000±; Mammals, 100±. There are 4 large and 15 small groups of animals exhibited in natural surroundings.

Historical Sketch. The museum, including the building and its contents to the value of $150,000, was presented to Pittsfield by the Hon. Zenas Crane of Dalton in 1903. At his suggestion it was united with the public library under the title of Berkshire Athenaeum and Museum.

Financial Support. By private subscription.

Building. Erected by the donor in 1901; an additional wing was added in 1909.

Administration. By a curator, responsible to a board of trustees.

Scope. The purpose of the museum is educational. Special attention is given to work with pupils of the public schools. Occasional lectures are given.

Attendance. Open free to the public daily at hours varying with the seasons.

PLYMOUTH:

PILGRIM SOCIETY. Pilgrim Hall.

A collection of historical relics, portraits, old books, documents, etc., connected with the early history of the settlement at Plymouth, is maintained in Pilgrim Hall under the charge of H. N. P. Hubbard, curator and librarian.

REHOBOTH:

REHOBOTH ANTIQUARIAN SOCIETY.

The treasurer reports that the society maintains a museum but repeated inquiries have elicited no further information.

SALEM:

ESSEX INSTITUTE.

Staff. Curator, George Francis Dow; Librarian, Alice G. Waters; Catalogers, Florence L. Stoddard, Marian S. Nichols; 3 assistants in library, 1 stenographer, and 1 janitor.

Art. Marbles, 4; Casts, 25; Prints and engravings, 5000±; Oil paintings, largely portraits, 175; Water colors, 25; Ceramics, English or oriental, used in America, 848; Textiles, 3000±; Glass (historical), 200±; Pewter (historical), 100±; Furniture (historical), 200±.

Commerce and Industry. Special exhibits illustrating the trades viewed from the historical standpoint, viz., the shoemaker, cooper, carpenter, weaver, etc.

History. Reproductions of house interiors, original costumes, tools, furniture, historical relics, and articles of display and adornment, to show the life of New England from early times to the present.

Historical Sketch. The institute was organized in 1848 by the union of the Essex Historical Society, incorporated in 1821 and the Essex County Natural History Society, organized in 1833. In 1867, by gift of $140,000 from George Peabody of London, the Peabody

Academy of Science was established and the natural history collections of the institute were transferred to the younger institution.

FINANCIAL SUPPORT. The institute has the following sources of income: from endowment, $9,540.84; from annual assessments of members, $1695; from other sources, $928.93.

BUILDING. The museum occupies two buildings erected in 1854 and 1858, and remodeled in 1906, representing a value of $124,000. They afford 11,000± square feet of floor space for exhibition, and 3000± for offices, workrooms, etc.

ADMINISTRATION. The curator is the secretary and executive officer of the institute and is responsible to the board of trustees.

SCOPE. Emphasis is laid on local collections, the aim of the institute being to illustrate as completely as possible the history of the county of Essex.

LIBRARY. 97,387 volumes, 342,614 pamphlets, 700 volumes of manuscripts and family papers, and a very large collection of newspapers, many of them printed in the 18th century. Among the special collections of books are 1400 genealogies; 2700 town histories and works relating to New England history; the Ward China library, containing over 1800 volumes, recognized as the best collection of the kind in the country; a collection of over 300 Bibles; a well selected art library; 20,000 books, pamphlets, etc., by Essex County authors; 1100 log-books, sea-journals, etc.; 1300 volumes relating to the commercial marine, 5000 directories from all parts of the world; public documents; publications of 253 societies, with which the institute conducts exchanges.

PUBLICATIONS. (1) Historical collections, issued quarterly, 45 volumes; (2) Bulletins (scientific), 30 volumes; (3) Proceedings (scientific), 6 volumes; (4) Miscellaneous publications, guides, etc.

ATTENDANCE. Open free to the public on week-days from 9 to 5.

PEABODY ACADEMY OF SCIENCE. Peabody Museum.

STAFF. Director, Edward S. Morse; Curators, John H. Sears (mineralogy, geology, and botany), Lawrence W. Jenkins (ethnology), John Robinson (relics of the East India Marine Society); 1 janitor, and 1 special constable.

ANTHROPOLOGY. Ethnology, native 786, foreign 10,676. These collections include the collections of the East India Marine Society, founded in 1799, and to-day constitute one of the most important ethnological museums of the world. The Korean collection is one of the most important in the country, while the Japanese collection of 3516 specimens is by far the largest in the world. Other countries represented are China, India, Siam, Thibet, the Islands of the Pacific, the Malay archipelago, Mexico, and South America. 2000 ethnological photographs accompany this collection.

BOTANY. Cryptogams of Essex County, 1610; Phanerogams of Essex County, 2209; General collections, 2530.

GEOLOGY. Minerals, on exhibition, 5000, in storage, 1000; Rocks, on exhibition, 2250, in storage, 800; Relief maps, models, etc., 25; Other collections, on exhibition, 1250. The rocks and minerals of Essex County are fully represented, and a small type collection of minerals illustrates the edition of Dana's "Mineralogy" used in schools.

HISTORY. A historical collection of portraits of prominent Salem merchants, members and officers of the East India Marine Society, together with many interesting relics connected with the early history of that institution, and models and pictures of Salem merchant vessels.

PALEONTOLOGY. Invertebrates, on exhibition, 1200, in storage, 700; Vertebrates, on exhibition, 50; Plants, on exhibition, 300.

ZOÖLOGY. Shells, 720 (360 from Essex County); Insects, 5061; Other invertebrates, 1180; Fishes, 341; Batrachians, 120; Reptiles, 145; Birds, 1990 (1300 from Essex County); Mammals, 244. These collections comprise a complete series of the animals of Essex County and a synoptic collection, illustrating the animal kingdom from the lowest to the highest forms.

HISTORICAL SKETCH. The trustees of the academy organized in 1868, having received funds by gift in 1867 from George Peabody of London, by birth, of Essex County. Under the instrument of trust, East India Marine Hall, erected in 1824, was purchased and refitted, and the museum of the East India Marine Society (begun in 1799) and the natural history collections of the Essex Institute (begun in 1834) were received by the trustees as permanent deposits and placed therein. The museum of the East India Marine Society had its origin in the extensive private collection of Capt. Jonathan Carnes, and has had an uninterrupted existence since that date.

FINANCIAL SUPPORT. Income from endowment, $8261.

BUILDING. East India Marine Hall, erected in 1824, purchased and refitted in 1868. Additions to the original building have been made, the most recent being Weld Hall, the gift of Dr. Charles G. Weld, opened in 1907. 19,500 square feet of floor space is available for exhibition, and 5000 for offices, workrooms, etc. A lecture hall seats 350.

Administration. By a director, responsible to a board of trustees.

Scope. The primary aim of the museum is educational, special effort being made to instruct the people of the county and the pupils of the public schools of the county. Special attention is paid therefore to local collections. The academy conducts classes in botany, zoölogy, and mineralogy, and lectures are given on these subjects.

Library. There is a reference library for the use of the staff.

Publications. These include two volumes of memoirs, and numerous annual reports.

Attendance. Open free to the public, week-days from 9 to 5, Sundays from 2 to 5. The attendance in 1909 was nearly 70,000.

SHARON:

SHARON HISTORICAL SOCIETY.

The society has a small collection of antiques in charge of George Kempton, custodian.

SOMERVILLE:

SOMERVILLE HISTORICAL SOCIETY.

This society, which is said by Thwaites to have a museum of antiques, reports that its collections are at present in storage.

SOUTH NATICK:

HISTORICAL, NATURAL HISTORY, AND LIBRARY SOCIETY.

This society is said by Thwaites to maintain a museum of natural history specimens and historical relics housed gratis in a room provided for by the will of Oliver Bacon.

SPRINGFIELD:

CITY LIBRARY ASSOCIATION. Art Museum.

Staff. Curator, George Walter Vincent Smith; Assistant curator, Eleanor A. Wade; 3 assistants, 1 cabinet maker, 1 charwoman, and 1 watchman.

Art. The museum includes the Horace Smith hall of sculpture and the George Walter Vincent Smith collection. The former occupies the first floor of the museum building and consists of 72 plaster casts of Greek and renaissance sculpture, 1200 photographs, 12,000 prints of modern and antique sculpture, and a small reference library of books on the subject.

The George Walter Vincent Smith collection includes: Sculpture, 5; Drawings, 42; Oil paintings, 80; Water colors, 31; Ceramics, 1000; Arms and armor; Bronzes; Pottery and porcelains; Glass; Carved jade, ivories, and wood; Tapestries; Embroideries; Laces; Oriental rugs; Textiles; Cloisonné enamels; Lacquers; Antique furniture; Illuminated missals; Book covers, etc. The collection is very rich in oriental art, the cloisonné enamels numbering about 200 pieces.

Historical Sketch. The museum is the result of the offer made in 1889 by Mr. and Mrs. G. W. V. Smith to bequeath to the association their valuable collections and to endow them on condition that they should be provided with suitable rooms for display and preservation. These collections were formally opened to the public in 1895. The Horace Smith collection was purchased and installed by funds from the estate of Mr. Smith.

Financial Support. The art museum and the museum of natural history are incorporated with the city library association and depend for support upon endowment funds and an annual appropriation from the city. In 1907, the appropriation amounted to $36,000. Of this appropriation, the art museum receives about $6000.

Building. Erected in 1894–5 at a cost of about $140,000, met by private subscriptions. About 15,000 square feet of space is available for exhibition, and about 500 for offices.

Administration. By the curator, who has entire responsibility.

Scope. The primary purpose of the museum is the instruction of the public. Permission is given to copyists.

Library. 1500 volumes on subjects connected with the collections are available for use of the staff and visitors.

Attendance. The George Walter Vincent Smith collections—open free to the public on week-days (except Thanksgiving, Christmas, and Fourth of July), March 21–September 21, from 2 to 6; September 22–March 20, from 1 to 5.

The Horace Smith hall of sculpture—open free to the public daily (except Thanksgiving, Christmas, and Fourth of July), March 21–September 21, from 2 to 6; September 22–March 20, from 1 to 5.

CITY LIBRARY ASSOCIATION. Museum of Natural History.

Staff. Curator, William Orr; Assistant curator, Mrs. Grace Pettis Johnson.

Anthropology. Uncivilized peoples: Archeology, native, 1869, foreign, 272. Civilized peoples, ancient, 22, modern, 110. The collection includes about 200 Indian baskets.

Botany. Cryptogams, 116 species; Phanerogams, 1028 species. There are also economic collections including 323 specimens of Indian corn (maize) and its products; 405 specimens of fiber plants and fibers; 659 specimens of woods; 200 kinds of insect galls, of which about 90 are figured in a bulletin of the museum.

Geology. Minerals, on exhibition, 1326, in storage, 9000±; Rocks, in storage, 240; Relief maps, models, etc., 7. There are 650 specimens of dynamic geology and a local collection of 346 minerals and 175 rocks.

History. A collection of about 900 articles relating to the history of the United States and especially to Springfield and vicinity. There is also a special exhibit of about 400 objects relating to colonial history, and a general collection of 5000 coins and medals.

Paleontology. Invertebrates, on exhibition, 150±, in storage, 450±; Vertebrates, on exhibition, 30, in storage, 20; Plants, on exhibition, 50, in storage, 150.

Zoölogy. Shells, on exhibition, 300±, in storage, 1500±; Insects, on exhibition, 600±, in storage, 300±; Other invertebrates, on exhibition, 51, in storage, 100±; Fishes, on exhibition, 7, in storage, 80±; Batrachians, on exhibition, 1, in storage, 20±; Reptiles, on exhibition, 10, in storage, 60±; Birds, on exhibition, 800±, in storage, 600±; Mammals, on exhibition, 92, in storage, 75±. These figures include some morphological specimens and a collection of 262 foreign birds largely from India; there is in addition a collection of 450± species of bird eggs. There are 5 large and 15 small groups of animals exhibited in natural surroundings; the best of these are the bison, elk, and flamingo groups.

Historical Sketch. The museum was organized in 1859 as a branch of the City Library Association and until 1871 occupied a room in the city hall. Upon the removal of the library to its new building on State Street in 1871, the museum was assigned a room on the lower floor, where it remained until 1895, when it was given quarters on the lower floor of the newly erected Art Museum. In 1898 the rapidly growing collections necessitated the erection of a building exclusively for the museum.

Financial Support. The City Library Association derives its income from invested funds, from city appropriation, and from the dog tax; this income is used in no specified proportion for maintenance of the Library, Art Museum, and Museum of Natural History.

Building. Erected in 1899 at a cost of $30,000 raised by subscription, the building affords 5720 square feet of floor space for exhibition, and 1000 for offices, workrooms, and storage.

Administration. By a curator, responsible to the directors of the association through its committee on the museum.

Scope. The principal work of the museum in its earlier years was the maintenance of local collections; it now devotes special attention to coöperation in public school work, especially by seasonal exhibits of birds. It has recently extended its work to research and publication.

Library. A reference library of natural history including 533 titles, serials being given title once.

Publications. Annual reports from 1898 to date; 2 special publications; and a series of Bulletins of which 1 has been issued.

Attendance. Open free to the public daily from 2 to 6. The attendance is estimated at 30,000 annually.

CONNECTICUT VALLEY HISTORICAL SOCIETY.

The society has a small historical collection, and a library of about 1000 volumes and pamphlets, now in storage awaiting the construction of the new city library building, in which the society will have a room. The curator is William C. Stone.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 10 acres, established in 1885, containing 21 reptiles, 988 birds, and 201 mammals.

TAUNTON:

BRISTOL COUNTY ACADEMY OF SCIENCES.

This institution was organized and incorporated in 1909 to promote and encourage public interest in all branches of natural history, in the liberal and useful arts, and in the conservation of our natural resources. It proposes to maintain a museum, a research and experimental laboratory, a bureau of information, a library, lectures, and publications. The museum will devote special attention to local collections and educational school work. The secretary of the society is A. Cleveland Bent, and the curator of the museum is Frederic H. Carpenter.

TOPSFIELD:

TOPSFIELD HISTORICAL SOCIETY.

The society reports that it has no museum, but it is understood that plans are being matured for the acquisition of the historic Capen house and its maintenance as a museum of local antiquities.

TUFTS COLLEGE:

TUFTS COLLEGE. Barnum Museum.

The museum is maintained primarily for teaching purposes and includes a general collection of natural history specimens in charge of J. S. Kingsley, director.

WELLESLEY:

WELLESLEY COLLEGE. Farnsworth Museum of Art.

STAFF. Professor of art, Alice Van Vechten Brown; Curator of art library and collections, Nancy May Pond; Assistant to the curator, Eloise M. Holton.

ART. A few original antique Greek and Roman marbles and examples of early Italian painting; 10,100± photographs, reproductions of drawings, etc.; the James Jackson Jarves collection, including 90± examples of old Italian, Flemish, and Spanish lace, a number of church vestments and embroideries; the Frost collection of Indian baskets; the Stetson collection of modern paintings; and a small collection of Egyptian antiquities dating from the 11th dynasty and obtained from the Egyptian exploration fund.

BUILDING. The Farnsworth Art Building was erected in 1889 by the late Isaac D. Farnsworth and contains, besides the galleries devoted to the museum collections, a library, lecture halls, laboratories, and studios used by students in the department of art in the college.

FINANCIAL SUPPORT. By the general funds of Wellesley College, with a special endowment for the professorship of art.

LIBRARY. 2000 volumes on fine arts, intended for the use of the students and faculty of the college.

WELLESLEY COLLEGE. Scientific Collections.

BOTANY. The botanical collections comprise charts, maps, etc.; preserved material; and herbaria. In the first group there are 292 charts, 5 maps, 61 Auzoux and Brendel models, and 1620 water color plates of flowers. The preserved material includes a total of 2339 specimens of plants and plant products; 683 jars of material for laboratory use or lecture demonstration; 2200 microscopic slides; 200 specimens in paraffin for sectioning; and 700 lantern slides. The herbaria include (1) a phanerogamic herbarium, comprising a general mounted collection of 12,800 specimens; a New England collection of 3750 specimens; a laboratory series of 960 specimens; and 1900 unmounted duplicates. (2) A cryptogamic herbarium of about 21,000 specimens, including many special sets of which the most important is the Clara E. Cummings collection of over 4000 lichens from all parts of North America.

Early in the history of the college the botanical museum, exclusive of the herbaria, was endowed by Mrs. S. W. Mann. This endowment has been sufficient to cover the cost of new material but has yielded nothing towards defraying the expense of caring for the collection. The college pays for much of the labor in connection with the museum, including the mounting of material for the herbaria.

GEOLOGY. The teaching collection in this department is in charge of Elizabeth F. Fisher, professor of geology and geography. It comprises about 5000 minerals; about 500 specimens of dynamic and structural geology; about 2500 specimens in historical geology; and a systematic collection of rocks and the educational series distributed by the United States geological survey. This collection is maintained by the laboratory appropriation; additions are made by special appropriations.

ZOÖLOGY. The collections of this department are housed in the zoölogical laboratories and adjoining corridors of College Hall and are in charge of Albert P. Morse, curator. They are maintained primarily for teaching purposes and the collection of North and South American birds is the most extensive.

WESTBOROUGH:

WESTBOROUGH HISTORICAL SOCIETY.

The president reports that the society maintains a small museum in charge of Amelia Harrington, curator. No reply has been received to repeated requests for further information regarding the collections, which are said by Thwaites to comprise household articles, portraits, etc.

WEST NEWBURY:

WEST NEWBURY NATURAL HISTORY CLUB.

This club occupies the lower floor of the Soldiers and Sailors' Memorial Building, where it has a library of 3000 volumes and many thousand pamphlets, and small collections in natural history and local history. The botanical collection is the most extensive. The collections are in charge of Helen S. Merrill, curator, but are not regularly open to the public.

WILLIAMSTOWN:

WILLIAMS COLLEGE. Museums.

ART. The department of art has a large collection of etchings, ceramics, photographs, etc., in charge of R. O. Rice, professor of art. These collections are awaiting the erection of a suitable building to provide space for their display.

GEOLOGY AND PALEONTOLOGY. This department maintains the following collections in charge of Herdman F. Cleland, professor of geology and curator of the museum, with 1 assistant and 1 janitor: Minerals, on exhibition, 1800, in storage, 5000; Rocks, on exhibition, 400, in storage, 1000; Dynamic geology, relief maps, models, etc., on exhibition, 50, in storage, 250; Invertebrate fossils, on exhibition, 1000, in storage, 3000; Vertebrates, on exhibition, 75, in storage, 25; Plants, on exhibition, 300, in storage, 250. Geological material of special interest includes a local collection; a Panama collection; a series of ornamental stones; an especially fine series of silica, agate, etc.; and a selected series of specimens to show weathering and erosion, folding and faulting, and ore formation. There are also 3000 recent shells on exhibition and 2000 in storage. The paleontological collection includes the types of many of E. Emmons' vertebrates and invertebrates from North Carolina, especially *Dromatherium sylvestre;* and of H. F. Cleland's invertebrates from the calciferous of New York and the devonian of Wisconsin. The museum has a geological library of 2500 volumes for the use of staff and students.

The geological museum occupies a building erected in 1908 by the Clark estate and affording 4200 square feet of floor space for exhibition, and 5400 for offices, workrooms, etc.

In the biological laboratory there is a good teaching collection, and in the basement of Berkshire Hall are stored the remnants of the collections of the old Lyceum of Natural History which is said to be the oldest student organization of its kind in the United States, having originated at least as early as 1825.

WOBURN:

RUMFORD HISTORICAL ASSOCIATION.

No reply has been received to repeated requests for information concerning this association, which is said by Thwaites to maintain a small museum.

WOODS HOLE:

UNITED STATES BUREAU OF FISHERIES.

The bureau maintains here a collection of living fishes and invertebrates, and a collection of alcoholic specimens representing the marine fauna of Buzzards Bay and of Vineyard and Nantucket sounds.

WORCESTER:

AMERICAN ANTIQUARIAN SOCIETY.

This society, founded in 1812, is said by Thwaites to maintain a collection of valuable portraits, antiques, and manuscripts, as well as cabinets of Indian and Mexican relics in its hall, erected in 1878.

CLARK UNIVERSITY. Clark Memorial Collection.

In accordance with the wishes of the founder of the university, Jonas Gilman Clark, a room 75 x 48 feet has been set apart in the library building for the exhibition of 74 of his best pictures and the books which he prized most highly. The gallery has an endowment of $100,000 yielding an income of about $4000 annually. It is in charge of Louis N. Wilson, librarian.

In an addition to the library building in course of erection in 1910 one floor will be devoted to a pedagogical museum, concerning which information is not yet available.

WORCESTER ART MUSEUM.

STAFF. Director, Philip J. Gentner; Assistants to the director, Benjamin H. Stone, Elizabeth M. Gardiner; Custodian, Arthur H. Stebbins; Attendant, Anna D. Hackett; 8 other employees.

ART. The collections include some 75 oil paintings, of which the most noteworthy are, "An Arrangement in Black and Brown: The Fur Jacket" by James McNeill Whistler; 3 "Portraits" by William Hogarth; "Christ disputing with the Doctors" by Herrera; "The Venetian Blind" by Edmund C. Tarbell; "Portrait of My Daughters" by Frank W. Benson; "Prelude" by Willard L. Metcalf; landscapes by Inness and Twachtman; portraits by Copley and Stuart; stained glass window, representing a peacock, by John LaFarge; the Bancroft collection of Japanese prints, numbering about 5000; the Russell collection of engravings by Sir Robert Strange; a collection of about 500 engravings by American engravers; collections of casts from antique and renaissance sculpture; porcelains, bronzes, cloisonné, and bric-a-brac, oriental, European, and American; and a few original marbles and bronzes. In addition, a collection of photographs was started in the fall of 1909 to give a comprehensive view of ancient and modern architecture, sculpture, painting, and the minor arts. It now consists of 2500 plates and 300 lantern slides, and is being rapidly added to.

Historical Sketch. The Worcester Art Museum was organized and incorporated in 1896 at the instigation of the late Hon. Stephen Salisbury, who gave a tract of land and the sum of $100,000, of which one-half was set aside for building and the remainder for maintenance. A further sum of about $35,000 was raised by popular subscription. The museum was opened May 10, 1898, with a loan exhibition formed by the coöperation of the Worcester Art Museum and the Worcester Art Society. On the death of the founder in 1905 the museum became his residuary legatee.

Financial Support. From endowment, $142,697; from memberships, $520; from admissions, $92; from other sources, $17; total, $143,326. The last report of the museum for 1908–9 shows a total property of about $3,400,000 of which $2,790,000 is income bearing. The balance covers the value of the collections, buildings, etc.

Building. A fireproof building was erected in 1897–8 at a cost of about $106,000. It provides approximately 10,000 square feet of floor space for exhibitions, in addition to the staircase halls.

Administration. By a director, responsible to a board of twelve trustees, through a committee on the museum.

Scope. The aim of the museum is the promotion of art and art education. It maintains a school of drawing, painting, and design in the Salisbury house, with about 90 pay pupils and 10 scholarships. From 1900 to 1907, it has held summer exhibitions of the work of contemporary artists in competition for prizes. In 1908 prize exhibitions were changed to exhibitions from which one or more paintings were bought. A course of lectures is given annually in the museum, under the auspices of the Worcester Art Society. This course has been supplemented since 1908 by a course of informal talks descriptive of the exhibits in the museum, some of which are illustrated with a stereopticon, held weekly during the winter months.

Library. 750 volumes, accumulated by gift and purchase.

Publications. Annual reports have been published since 1899, and a Bulletin, beginning with 1910.

Attendance. Open to the public on week-days, except Monday, from 10 to 12 and 2 to 4.30, and on Sundays from 1.30 to 5. Admission is free except Tuesday and Thursday, when an entrance fee of 25 cents is charged. Since the opening there have been 309,000 visitors, of whom 299,000 have come on free days, and 10,000 on pay days.

WORCESTER NATURAL HISTORY SOCIETY. **(12 State Street.)**

The society occupies an old-time residence in which it maintains a museum in charge of Herbert D. Braman, superintendent, and Mrs. Ella L. Horr, custodian. The collections are strictly local and include a good herbarium of ferns, lycopods, grasses, sedges, mosses, lichens, liverworts, and flowering plants of Worcester County; the Eliza D. Dodge collection of birds of the county, mounted in natural surroundings and housed at the Mansion House in Green Hill Park for lack of room in the State Street building; a small but representative collection of local minerals; and a good collection of invertebrate and vertebrate animals of the county. A wild flower exhibit properly labeled is kept on tables in the museum during the flowering season; a garden of local ferns is maintained on the grounds of the society; and classes for the study of different groups of plants, rocks, minerals, insects, etc. in the field and at the museum are maintained every year. Successful bird classes are also conducted at the museum and in the field; bird skins are mounted in celluloid tubes and loaned to schools. Small cases showing the life history of destructive insects are used for public school work. A library of about 600 volumes on science and nature study is maintained for reference.

The society has some invested funds but is supported largely by private subscription and membership fees. The publications of the society include (1) Annual Reports. (2) "Physical Geography of Worcester," by J. H. Perry. (3) "The Geology of Worcester," by J. H. Perry. (4) "Flora of Lake Quinsigamond," by G. E. Stone. (5) "Catalog of the flowering plants and ferns in Worcester County," by J. H. Jackson.

The museum is open free to the public on week-days, except holidays, from 9 to 12 and 2 to 5. The attendance is 6000–8000 yearly.

WORCESTER SOCIETY OF ANTIQUITY.

No information has been received regarding this society, which is said by Thwaites to maintain a museum of about 6000 pieces illustrating especially the epochs of the various wars.

MICHIGAN

ADRIAN:

ADRIAN COLLEGE.

The registrar reports that the museum contains a small collection of animals, birds, insects, and minerals. There is no list or catalog, no curator, and no regular financial support.

ALMA:

ALMA COLLEGE. Francis A. Hood Museum.

Staff. The museum is in charge of H. M. MacCurdy, professor of biology.

Geology and Paleontology. A general collection of about 2500 rocks, minerals, etc., and the Alexander Winchell collection of over 6000 rocks, minerals, and fossils, many of which were collected in Michigan and described by Dr. Winchell; the Shroyer-Wilcox collection of several thousand paleozoic fossils, representing about 1000 species, those of the Cincinnati group being especially well represented.

Zoölogy. A general collection estimated to contain 2000 specimens of vertebrate and invertebrate material; the Stillwell collection of about 300 Michigan birds and mammals, collected for the most part in the vicinity of the college and representing some species now extinct or very rare in that locality; and the W. S. Crawford collection of birds from Florida, Arizona, and Michigan.

Financial Support. The museum has had no regular income in the past, but beginning in 1910 the college will set aside $50 annually from incidental funds for museum purposes.

Historical Sketch. In 1897 the museum was formally opened in a room of the gymnasium building, the installation being made possible by gifts of Mrs. Francis A. Hood of Saginaw and her son, in memory of Francis A. Hood. In 1900 the museum was transferred to the building which it now occupies. The special collections of the museum have been acquired partly by purchase and partly by gift.

Building. Erected in 1900 and affording 3500 square feet of floor space for exhibition, and 1500 for storage, workrooms, etc.

Attendance. Open free to the public on Tuesday and Saturday afternoons from 1.30 to 3.30. No statistics of attendance are available.

ANN ARBOR:

UNIVERSITY OF MICHIGAN. Museum.

Staff. Director, Jacob Reighard; Curator, Alexander G. Ruthven; Preparator, Norman A. Wood; 1 assistant and 1 janitor.

Anthropology. Uncivilized peoples: Archeology, foreign, 300±; Ethnology, native 600±, foreign, 250±. Civilized peoples, modern, 1500±. This department includes the Beal-Steere collection of arms, implements, carpenters' tools, musical instruments, and idols of the Chinese; many articles domestic and warlike used by North American Indians and natives of the South Pacific Islands; clothing of the American Indians, modern Peruvians, Formosans, and natives of the East

Indies and Alaska; casts from Europe and the Ohio mounds; pottery from the cliff dwellers of New Mexico and Arizona; the Daniel DePue collection chiefly from Washtenaw County, Michigan; a fine collection of flint instruments from Denmark; and an extensive collection of Peruvian burial pottery secured by the Beal-Steere expedition. There is also the Frederick Stearns collection of 1400 musical instruments representing nearly all types of all nations and ages, collected with reference to its educational value as illustrating the evolution of modern types; and the Chinese exhibit of the New Orleans cotton exposition illustrating the culture and manufacture of cotton and its use in garments, native-made household furniture, and house and garden pottery.

BOTANY. 100,000 specimens representing 5000 species and including large series of Michigan plants collected by the public surveys; the Houghton, Sager, Ames, Harrington, Beal-Steere, Adams-Jewett, and the Garrigues herbaria; Holden's and Setchell's *Phycotheca Boreali-Americana;* Briosi and Cavara's parasitic fungi; Seymour and Earle's economic fungi; the continuation of Ellis's North American fungi and large additions to the cryptogamic flora of Michigan.

GEOLOGY. Minerals, 6000, including the Lederer collection of 2500 specimens, principally European; rich series of Michigan minerals, including all varieties of copper ores and associated minerals from the Lake Superior region. Also an economic collection, including a series of foreign and domestic building stones from the Smithsonian Institution; a series illustrating the metalliferous region of the upper peninsula of Michigan; 150 specimens of ores and rocks, 39 of copper ore and associated rocks from the Wolverine copper mine, 7 of native copper from the Calumet and Hecla mines, 25 of asphaltum and petroleum, and samples of brine and salt from Percy's salt well in Mason County. There is a good collection in dynamic geology and a series of relief maps, models, and lantern slides.

PALEONTOLOGY. 95,000± specimens, nearly all invertebrates, including a large series from the geological survey of the state, of which more than 100 are type specimens; the White collection of 1018 catalog entries; the Rominger collection of 5000 species, including types of all the paleozoic corals described by Dr. Rominger in the third volume of the geologic report of Michigan; and many other series.

ZOÖLOGY. Shells, on exhibition, 13,000, in storage, 50,000±; Insects, on exhibition, 500, in storage, 50,000±, co-types, 9; Other invertebrates, on exhibition, 500, in storage, 2000±; Fishes, in storage, 6864; Batrachians, in storage, 1345; Reptiles, on exhibition, 21, in storage, 1398; Birds, on exhibition, 1545, in storage, 6589, types, 44; Mammals, on exhibition, 226, in storage, 1018; Bird eggs, 2445, nests, 261, stomachs, 1532. 53 small groups of animals are exhibited in natural surroundings.

Financial Support. The museum receives an average of $3371 a year from the university, which in turn is supported by the state.

Building. The museum occupies 8214 square feet of floor space for exhibition in a building erected in 1881 at a cost of $50,000.

Scope. Exploration and research (principally on state problems), school and college teaching, and maintenance of local collections. Systematic collections of Michigan animals are supplied to schools of the state. The museum is the depository of the collections and records of the state biological survey.

Publications. (1) Annual reports of the curator to the board of regents. (2) Reprints of papers published by the staff and others on the museum collections are purchased and sent to persons and institutions on the museum exchange list.

Attendance. The museum is open free to the public daily except Sundays from 8 to 5.

DETROIT:

DEPARTMENT OF PARKS AND BOULEVARDS.

This department maintains in Belle Isle Park an aquarium and zoölogical garden, in charge of an executive officer appointed by the mayor. The aquarium contains a collection of living fishes which is said to be the third largest known, and which is maintained at an annual expense of about $11,000. The zoölogical garden contains 60 birds and 107 mammals which are maintained at an annual expense of about $6000. These collections are open free to the public and the attendance exceeds 800,000 annually.

DETROIT MUSEUM OF ART.

Staff. Director, A. H. Griffith; Assistant director, C. H. Burroughs; Curators, Garfield Jenney, Charles Williams, Ernest Covington, H. Alger; Librarian, Fred LaPointe; 1 engineer and 1 watchman.

Anthropology. A good collection in archeology and ethnology.

Art. A fine collection of casts and marbles; about 2000 prints and engravings; an important collection of old masters as well as many modern paintings; 40 water colors; a very large collection of ceramics and oriental material; and a small collection of textiles.

Other Collections. A small collection of minerals and fossils; a large collection of shells; and small collections of insects and birds.

Financial Support. The museum receives an annual appropriation of $1800 from the city, and about $2000 a year from private subscriptions which are used as a picture fund.

Building. The building covers about 20,000 square feet of ground and is three stories high; it was erected in 1888 at a cost of $160,000, met partly by subscription and partly by city appropriation. A new site and a new building are now under consideration.

Administration. By a director, responsible to a board of trustees through its executive committee.

Scope. Instruction of the public through exhibition, lectures, etc. A series of Sunday afternoon lectures on art, given during the winter months for the last 17 years, draws audiences which crowd an auditorium accommodating 1000 persons, and as many more are frequently turned away. Lectures are given through the week to public school classes which come to the museum.

Library. 1000 volumes on art, travel, etc., for use of both staff and public.

Publications. (1) A bulletin issued quarterly. (2) Annual reports. (3) Catalogs and handbooks issued at irregular intervals.

Attendance. Open free to the public on week-days and Sunday afternoons. The attendance is about 170,000 a year.

EAST LANSING:

MICHIGAN AGRICULTURAL COLLEGE.

The college maintains a museum in connection with the department of zoölogy and geology, in charge of Walter B. Barrows, head of the department. The collections comprise about 1000 Indian relics; 2000 minerals and ores; 1000 fossils; the Ward series of casts of fossils; approximately 75,000 native and foreign insects, in charge of the professor of entomology; and the following other zoölogical collections, 50 mounted fishes, 1100 mounted birds, 2000 bird skins, 150 mounted mammals, and 30 mounted vertebrate skeletons. Special effort has been made to render the local exhibits as complete as possible. The museum occupies a main exhibition hall affording about 2475 square feet of floor space. It is supported from the general funds of the college and is open free to the public daily from 8 to 5 and on Sundays from 2 to 5. The average daily attendance is estimated to be about 35; in several instances there have been over 4000 visitors in a single day.

In addition to the collections described above, there is a series of botanical specimens and woods in the department of botany.

GRAND RAPIDS:

KENT SCIENTIFIC MUSEUM.

STAFF. Director, Herbert E. Sargent; Assistant director, Edwin R. Kalmbach; Secretary, Lena E. Baker; Assistants, E. S. Holmes and Helen B. Allen; 1 janitor and engineer, and 1 printer (part time).

ANTHROPOLOGY. Uncivilized peoples, native, 3000±; Civilized peoples, ancient, 100 (Egyptian antiquities), modern, 700 specimens.

ART. Ceramics, 400 specimens.

BOTANY. Herbaria, 4500± specimens; Display bottles of seeds and grains, 300; Miscellaneous, 500±; Forestry, native woods, 350±, foreign woods (mostly West Indian and South American), 200±.

GEOLOGY. Minerals, on exhibition, 3610, in storage, large quantities; Rocks, on exhibition, 230. There are many fine cabinet specimens of Grand Rapids gypsum and calcites, and Joplin, Missouri, sphalerites, dolomites, and calcites for exchange.

NUMISMATICS. 1500 specimens.

PALEONTOLOGY. Invertebrates, 2170; Vertebrates, 20, including type specimens of *Botherium sargenti*; Plants, 300. The collections include the skeleton of a mastodon from Florida, restored and mounted, and a mastodon from Michigan in process of restoration.

ZOÖLOGY. Shells, on exhibition, 2000 species, in storage, 5675; Insects, 4030; Other invertebrates, 1525; Fishes, 40; Reptiles, 40; Birds, on exhibition, 750, in storage, 3000; Mammals, 30; Bird eggs and nests, 600. These collections include a mounted specimen of a 70 foot whale; the Steere collection of Philippine corals, comprising 1000 specimens, said to be the most complete collection of Philippine corals in the United States; and the E. Crofton Fox collection of Bahama sponges.

HISTORICAL SKETCH. The transfer of the collections of the Kent Scientific Institute to the board of education constituted the beginning of the present museum. During the year 1902 these collections, together with several others acquired by purchase, were displayed in the audience hall of the Central High School. The present museum building was opened to the public on January 7, 1904.

FINANCIAL SUPPORT. By an appropriation from city council, the amount being fixed from year to year, and by gifts from interested friends. The last city appropriation was $6774.

BUILDING. Erected in 1870, purchased by the city at a cost of $40,000, and adapted to museum purposes in 1903. It affords 11,000 square feet of floor space for exhibition, and 2500 for offices, workrooms, etc.

ADMINISTRATION. By a director, who is responsible to a library and museum commission elected by popular vote.

SCOPE. Instruction of the general public and pupils of the public schools, and the maintenance of local collections. Regular circulating collections are maintained for use in the schools, lectures are given at the museum to teachers with their classes, exhibits are made each year at the West Michigan state fair, and special exhibits are held annually at the museum.

LIBRARY. 1000 volumes of a scientific character, used chiefly by the staff.

PUBLICATIONS. Bulletin, issued monthly.

ATTENDANCE. Open free to the public on week-days from 8.30 to 5 and on Sundays and legal holidays from 2.30 to 5. The yearly attendance approximates 55,000.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 4 acres, established in 1891, containing 7 reptiles, 48 birds, and 90 mammals.

HOUGHTON:

MICHIGAN COLLEGE OF MINES. Mineralogical Museum.

The college maintains the following collections in geology and paleontology in charge of A. E. Seaman, professor of mineralogy and geology: Minerals, on exhibition, 15,300; Rocks, on exhibition, 4000, in storage, 5000; Microscopic sections, of minerals, 2132, of rocks, 4973; Exhibits to show the properties of minerals, 485; Specimens illustrating the formations of Michigan, 1975; Natural crystals, 2260; Crystal models in glass, 151, in wood and plaster, 2153; Economic collections, 3000. In paleontology there are 3000 invertebrate, 200 vertebrate, and 100 plant fossils.

In addition to the foregoing there are 250 ethnological specimens; 300 specimens of woods; 1000 shells; and a small synoptic collection in zoölogy.

LANSING:

MICHIGAN PIONEER AND HISTORICAL SOCIETY. (Capitol.)

The society maintains a museum on the fourth floor of the capitol, including the best collection of Indian relics on display in the state; 3000 pieces of china; a collection of fine pewter, brownware, candlesticks, lamps, etc.; 100 portraits; some very old furniture; and a collection of miscellaneous articles of historical interest. The museum has no endowment or special income but is maintained by the society in connection with its general historical investigation.

MINNESOTA

COLLEGEVILLE:

ST. JOHN'S UNIVERSITY.

The university maintains a museum for teaching purposes in charge of Severin Gertken, curator, and James Hansen and Fridolin Tembreull, assistants. The collections occupy 4576 square feet of exhibition space on the second floor of the library building. There are 6 cases of ethnological specimens, representing the Minnesota Chippewa Indians, the Dakota Sioux Indians, and the Alaska Indians. The herbarium includes 1200 species; and the geological collection, 2500 specimens. In zoölogy there are 15,000 insects, including 600 species of beetles, and an equal number of butterflies and moths from Minnesota; and 400 mounted specimens of birds and mammals. There are also small collections of shells, coins, and eggs.

MINNEAPOLIS:

MINNEAPOLIS SOCIETY OF FINE ARTS.

The society holds occasional exhibitions but maintains no permanent museum.

MINNESOTA ACADEMY OF SCIENCES. Museum. (Public Library Building.)

Staff. Curator, John W. Franzen.

Anthropology. Skulls, body and limb bones of prehistoric peoples from burial mounds in Minnesota and adjoining states; Indian implements, weapons, clothing, etc., from Minnesota; an extensive and varied collection from the Philippines.

Art. The following collections have recently been placed in the museum by Mr. T. B. Walker: A series of the finest 8th century Persian porcelains; Greek vases and Tanagran sculptured figures of the 6th to the 2nd century B. C.; ancient Greek and Assyrian glassware; Chinese idols and temple gods; 9 bas-reliefs and 4 marble heads from Palmyra; 3 stone tablets with cuneiform inscriptions from the palaces of Ashur-nazir-pal, king of Assyria; 40 Chinese bronze vases of the 12th to the 18th century; a marble statue of Hercules from Palmyra; etc.

Botany. A herbarium of several thousand flowering plants of Minnesota; a collection of Philippine woods.

Geology. The Walker collection of ornamental stones, said to be the best of its kind in the West; a general geological collection representing the rocks and minerals of Minnesota and adjacent states, and the province of Ontario.

Paleontology. Several hundred invertebrate fossils from a number of localities in southeastern Minnesota, forming the nucleus of a local collection.

Zoölogy. An extensive collection from the Philippines, including one of the largest series of corals known from this region, and a large number of specimens of Nautilus which formed the basis of Professor Lawrence Griffin's investigations on this form; 2700 lepidoptera, chiefly from the palearctic, nearctic, and Indo-Malay regions; an excellent representative collection of Minnesota birds and 4000–5000 mounted and unmounted bird skins from the Philippine Islands, including a number of type specimens and forming one of the most complete collections made in that region.

Building. The museum occupies about 3750 square feet of exhibition floor space in the public library building.

Attendance. Open free to the public on week-days from 8.30 to 5.30 and on Sundays from 2 to 5.30. The number of visitors is estimated at 20,000–25,000 annually.

UNIVERSITY OF MINNESOTA.

The curator reports that the zoölogical collections are at present in storage owing to lack of space for exhibition. It is hoped that suitable quarters will be provided in the near future when special attention will be given to the formation of local collections. No information has been received regarding other collections of the university, which are said by Merrill to comprise a herbarium of 325,000 plants, 200 specimens of woods, 2000 jars of botanical material in alcohol or formalin; 5700 rocks, 2000 minerals, and 1500 thin sections; and 9700 entries in paleontology, with additional study collections.

WALKER PRIVATE GALLERY. (807 Hennepin Ave.)

In this gallery Mr. T. B. Walker has a carefully selected series of about 250 oil paintings, including many by old masters; a collection of very fine Chinese bronzes and porcelains; Persian, Babylonian, and Egyptian pottery, etc. This gallery is open free to the public on week-days during the hours of daylight.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of about 10 acres containing 52 birds and 24 mammals.

NORTHFIELD:

CARLETON COLLEGE.

The college has a museum containing approximately 12,000 fossils, 2000 minerals, and 1000 zoölogical specimens. The collection is now in storage owing to changes in the buildings of the college and there is no curator at present.

ST. PAUL:

HAMLINE UNIVERSITY.

No reply has been received to repeated requests for information concerning the natural history museum of this university, which is said by Merrill to comprise 200 anthropological specimens, 3300 botanical specimens, a general collection of minerals, 1000 specimens of historical geology, 1000 fossils, and the following zoölogical collections: Shells, 500; Insects, 1000; Other invertebrates, 500 alcoholic and 300 dried specimens; Birds, 200 mounted specimens and 400 skins; Mammals, 100 skins; Osteology, 100 articulated and 250 disarticulated skeletons; Alcoholic vertebrates, 200; Anatomical preparations, 500; Bird nests and eggs, 500.

MINNESOTA HISTORICAL SOCIETY.

The society maintains a museum, library, and portrait gallery; the two former in the new state capitol building, the latter in the old capitol, where the former governor's rooms are used as a state portrait gallery. The museum contains historical relics, chiefly of local interest, and a large archeological collection, including about 23,000 specimens donated by Rev. Edward C. Mitchell, and about 100,000 specimens, collected and donated by the late Hon. J. V. Brower. From the field notes and maps accompanying the latter collection, there is in press a quarto volume on "The Archaeology of Minnesota," with about 500 maps of aboriginal mounds in this state, by Prof. N. H. Winchell, to be published by the society.

ST. PAUL INSTITUTE OF ARTS AND SCIENCES.

In connection with its department of natural and physical sciences the St. Paul Institute has established a museum which was opened to the public on February 4, 1910. The museum includes the Mitchell collection of 12,000 sponges, corals, shells, other marine invertebrates, and fossils; a collection of 400 game birds and fishes; over 2000 fossils; 600 Indian pottery, implements, and weapons; an ethnological collection of 600 objects from the Philippines, Egypt, and North American Indian tribes; 2000 geological specimens; a Minnesota herbarium; a general collection of algae; and about 500 imported butterflies. The museum is in charge of a committee of the trustees, of which the secretary of the institute, Dr. Arthur Sweeney, is chairman. Up to the present time Prof. F. W. Sardeson of the state university has acted as curator. The museum is supported by an appropriation from funds of the institute. It occupies a fireproof section of the auditorium affording about 4000 square feet of floor space. Two additional sections of the same size are available for expansion. The collections are open free to the public on week-days from 2 to 5 and on Sundays from 2 to 6.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park containing 8 birds and 59 mammals.

ST. PETER:

GUSTAVUS ADOLPHUS COLLEGE. Museum.

Staff. Curator, J. A. Edquist.

Anthropology. Uncivilized peoples: Archeology, native, 300; Ethnology, native, 50, foreign, 100. Civilized peoples, modern, 50.

Botany. Cryptogams, 500; Phanerogams, 2500.

Geology. Minerals, on exhibition, 500, in storage, 200; Rocks, on exhibition, 500, in storage, 100; Dynamic geology, relief maps, models, etc., 150.

Paleontology. Invertebrates, on exhibition, 800, in storage, 100; Vertebrates, 25; Plants, 100.

Zoölogy. Shells, 200; Insects, 500; Other invertebrates, 100; Fishes, 300; Batrachians, 25; Reptiles, 25; Birds, 100; Mammals, 50.

The museum was established in 1875 at the time of the founding of the college and now occupies 1000 square feet of floor space for exhibition; its principal aim is college teaching although it is also open to the public.

WINONA:

STATE NORMAL SCHOOL.

The school has a museum comprising about 500 species of minerals and rocks; 12 cases of fossils; a large collection of shells; an excellent synoptic collection of other invertebrates; a collection of local fishes, snakes, and turtles; over 220 species of local birds, including some unmounted skins; 15 species of local mammals; a small osteological collection for study purposes; 30 or more Minnesota woods; and a herbarium of 3000 or more specimens of the local flora. There is also a skeleton of a mastodon and a small collection of stone implements. This museum occupies 2240 square feet of floor space for exhibition, and is in charge of John M. Holzinger, curator, with the exception of the collection of minerals and fossils, which has recently been transferred to the care of the department of geography.

The nucleus of this museum is a collection purchased prior to 1882 for $3500 and known as the Woodman collection. This was purchased by the Winona Society of Arts, Sciences, and Letters, which deposited the collection in the normal school.

MISSISSIPPI

AGRICULTURAL COLLEGE:

MISSISSIPPI AGRICULTURAL AND MECHANICAL COLLEGE.

The college maintains an experiment station herbarium of 2000 phanerogams and 2000 fungi (chiefly parasitic), and a college herbarium of 2000 specimens. There are also 500 geological specimens, and a zoölogical collection, including 10,000 insects, a synoptic collection of 70 invertebrates, a few fishes, and a fairly good collection of bird eggs.

JACKSON:

MILLSAPS COLLEGE.

The college has a museum which has accumulated since 1894 and now includes a collection of about 100 Indian relics from Mississippi; 100 specimens of Japanese art, religion, warfare, and domestic life; 500 minerals and 500 rocks, including the educational collection of the United States geological survey; 500 invertebrate and 60 vertebrate fossils; including vertebrae and teeth of *Zeuglodon, Mastodon, Carcharodon,* etc.; 80 invertebrates and fishes; and a collection of 500 bird eggs representing 50 varieties. This collection is in charge of J. M. Sullivan, professor of geology, and is supported by occasional gifts and laboratory fees of college classes.

STATE DEPARTMENT OF ARCHIVES AND HISTORY. (State Capitol.)

This department contains a collection of native archeology and a historical collection including portraits, manuscripts, war relics, etc. in charge of Dunbar Rowland, director, and Mrs. Dunbar Rowland, assistant. There is also a historical library of 3000 volumes, including a valuable collection of transcripts of French, English, and Spanish archives relating to Mississippi history, thoroughly classified and accessible to accredited investigators. The department publishes annual reports, of which 8 have been issued; an annual volume on the sources of Mississippi history, 1 issued; and an official and statistical register published every four years, 2 issued.

UNIVERSITY:

UNIVERSITY OF MISSISSIPPI.

The university is the depository for the collections of the state geological survey, and maintains teaching collections in addition. There is a rich collection of Mississippi geology made by Dr. Eugene Hilgard; a good collection of Mississippi lignites; and collections showing the economic geology of the state. There is also a valuable collection of shells, containing some 10,000 varieties purchased from Dr. Francis K. Markoe, and small collections in ethnology and botany. These collections are in charge of E. N. Lowe, state geologist, R. W. Jones, professor of geology, and W. S. Leathers, professor of zoölogy.

MISSOURI

COLUMBIA:

STATE HISTORICAL SOCIETY OF MISSOURI.

This society has a small historical collection and hopes for a new building in which to provide for a museum.

UNIVERSITY OF MISSOURI.

The department of classical archeology maintains a museum comprising a large collection of casts of sculptures, architectural details, Greek vases, etc., and an extensive series of photographs of paintings illustrating the history of art. This museum is in charge of John Pickard, curator and professor of classical archeology, and occupies about 6000 square feet of floor space in the main university building.

Teaching collections are maintained in connection with the departments of agriculture, botany, ethnology, geology, and zoölogy.

DOE RUN:

GRAVES PRIVATE MUSEUM.

This museum is supported privately by Mr. F. P. Graves, but is open free to the public on week-days from 8 to 6. It includes large collections of Indian and mound builders implements, minerals, fossils, articles of historical interest, coins, stamps, autographs, etc. The minerals and ores are the most valuable portion of the museum and the collection of English calcite crystals, barites, fluorites, etc., is comparable with those of the larger museums.

GLASGOW:

PRITCHETT COLLEGE.

No reply has been received to repeated requests for information concerning the museum of this college, which is said by Merrill to comprise 250 ethnological specimens, a herbarium of 500 native plants, 2000 minerals, 10,000 fossils, and 800 zoölogical specimens, including 100 native birds and 400 marine invertebrates in alcohol.

KANSAS CITY:

DANIEL B. DYER MUSEUM. (Public Library Building.)

This museum is named in honor of Daniel B. Dyer of Augusta, Georgia, who in 1905 presented to the school district embracing Kansas City a large collection of relics of the Indians, mound builders, and cliff dwellers; Mexican and oriental curios; pottery; relics of the Spanish-American war; small fossils; coins and medals; and a large collection of minerals. The museum is maintained by the school tax in connection with the entire library building and is in charge of Mrs. Ophelia Jacobs, curator, and Mrs. Kathleen J. Marley, assistant curator, who are responsible to the board of education. The museum is an important adjunct to the study of archeology, geology, and history in the public schools, and is open free to the public on week-days, except holidays, from 9 to 5 and on Sundays from 2 to 5.

WESTERN GALLERY OF ART. (Public Library Building.)

The board of education maintains on the upper floor of the public library building collections comprising 63 copies in oil and more than 600 carbon photographs of works of the masters of various schools of painting from the 14th to the 19th century, also reproductions in marble, bronze, terra cotta, and plaster of representative examples of antique and renaissance sculpture.

This museum originated in a collection of 20 paintings, 500 photographs, and casts, presented by Mr. W. R. Nelson to the Kansas City Art Association for the city in 1896. In January, 1902, entire control was vested in the board of education, and the collections are now maintained by the school tax in connection with the entire library building. The gallery is in charge of Mrs. Helen R. Parsons, curator, and Lucile Gibson, assistant.

The aim of this museum is to set forth an adequate impression of the character and power of the world's masterpieces, the copies being a special selection for this purpose. The reproduction of the Sistine Madonna of Raphael is celebrated, for example, as the best copy ever made of that painting.

The museum is open free to the public on week-days, except holidays, from 9 to 5, and on Sundays from 2 to 5.

ROLLA:

MISSOURI GEOLOGICAL SURVEY.

The survey maintains a museum in charge of H. A. Buehler, state geologist, and comprising 1000 invertebrate fossils and about 5000 minerals and rocks. The collections are confined to the state and are maintained chiefly as a working collection. The survey also has a geological library of 7000 volumes.

MISSOURI SCHOOL OF MINES. Museum.

The museum is supported jointly by the state and the University of Missouri, the appropriations varying according to the needs of each year. The collections are in charge of G. H. Cox, professor of mineralogy and petrography; L. S. Griswold, professor of geology; and V. H. McNutt, assistant in mineralogy and petrography. They include 2000 minerals on exhibition and 4000 in storage; 1000 rocks on exhibition and 1000 in storage; 50 relief maps, models, and specimens of dynamic geology; 700 specimens of economic geology on exhibition and 500 in storage; 1000 invertebrate fossils on exhibition and 500 in storage; and 200 plant fossils in storage. The most noteworthy collections are the calcites, and the lead and zinc ores of Missouri; these include the state display at the St. Louis exposition. The Colonel Kingston collection of about 800 specimens, rich in pseudomorphs, has recently been acquired. The museum has developed chiefly since 1904 and is extensively used for teaching purposes; it is also open on all school days for the inspection of the public.

SPRINGFIELD:

DRURY COLLEGE. Edward M. Shepard Museum.

STAFF. Curators, Charles H. Spurgeon (biology); Edward B. Hall (geology).

ANTHROPOLOGY. Ethnology, native, 500±, foreign, 250±. This material includes collections from the South Sea Islands, Egypt, Mexico, and the Pueblo Indians. There is also a valuable collection deposited by Mr. H. O. LeBlanc, including a very full series of specimens illustrating the life and warfare of American Indians.

BOTANY. Cryptogams 500±; Phanerogams, 2000±. This collection is particularly rich in Syrian and Hawaiian ferns, British mosses, American and foreign algae, and North American lichens and fungi. There is also a nearly complete representation of the flora of Greene County, Missouri.

GEOLOGY. Minerals, 1500±; Rocks, 500±. About 700 lead and zinc ores from southwest Missouri; the Flanner collection of 500 copper ores from the Lake Superior region; 150 iron ores from Iron Mountain, Missouri, and 200 from Lake Superior; 100 asphalt and bituminous products from Oklahoma; and 300 bricks, tiles, marbles, clays, whet stones, oils, etc., from Missouri. This department also includes the valuable private mineralogical and geological collection of the late Professor Sanborn Tenney of Williams College.

HISTORY. A collection of 200± specimens including old newspapers, money, household articles, and other material of local historical interest.

PALEONTOLOGY. Invertebrates, 1800±; Vertebrates, 300±; Plants, 300±. The plants are mainly from local Bennsylvania coal measures.

ZOÖLOGY. Shells, 1000±; Insects, 1000±; Other invertebrates, 150±; Fishes, 300±; Batrachians, 25±; Reptiles, 50±; Birds, 300±; Mammals, 75±. This department includes a collection of reptiles and birds of Greene County; sponges, coelenterates, and echinoderms from the West Indies and the Pacific coast. There are 6 small groups of animals exhibited in natural surroundings. There is also a good series of models and dissections for teaching purposes.

HISTORICAL SKETCH. The nucleus of the museum is the private collection of Dr. E. M. Shepard, brought by him to the college in 1878, and donated to it in 1904. Most of the additions have also been made through his efforts. Valuable collections were obtained from the World's Fair at St. Louis.

FINANCIAL SUPPORT. From the general funds of the college.

BUILDING. The museum occupies 3500 square feet of floor space in Pearson's Hall, erected in 1901 at a cost of $55,000.

ADMINISTRATION. By the curators, acting with a committee of the faculty and responsible to the board of trustees.

SCOPE. College teaching, maintenance of local collections, and instruction of the general public.

LIBRARY. A reference library of about 1000 volumes, composed mainly of United States and state reports, and intended primarily for the use of the staff and students.

Publications. The museum has no publications, but the science departments of Drury College publish the Bulletin of the Bradley Geological Field Station.

Attendance. Open free to the public on week-days from 8 to 5. The number of visitors is estimated at 500–1000 annually.

ST. JOSEPH:

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 1 acre, established in 1890, containing 5 reptiles, 52 birds, and 48 mammals.

ST. LOUIS:

CITY ART MUSEUM.

Staff. Director, Halsey C. Ives; Secretary, Madeline Borggraefe; Curator of applied arts, Francis E. A. Curley; Docent, Alice More; Librarian, Blanche A. Archambault; Gallery attendant, Mrs. Perry Bartholow; Artist assistant, 1 sculptor attendant, 1 stenographer, 3 gallery men, 1 photographer, 2 engineers, 1 fireman, 3 janitors, 1 night watchman, and 1 office boy.

Collections. Acquired by purchase: 12 oil paintings; 1 piece of sculpture in bronze; 71 pieces of silver of the 15th and 16th centuries; a collection of Persian tiles of the 16th and 17th centuries; 18 pieces of textiles; and 2 Persian manuscript bindings. By presentation: 4 oil paintings; 1 box of amber and mummy beads; 4 modern casts; 5 cases of Japanese objects; 1 brass and lacquered stand; 1 large Chinese bowl; 3 carved-wood frames; and 2 carved-wood baskets. The following collections are the property of the department of art at Washington University and are loaned by it to the City Art Museum: The Davis collection of 132 pieces of antique bronze; the Bixby collection of 182 French and Austrian bronze medals; 6 pieces of American bronze; 113 engravings; 151 Unger etchings; 100 etchings; 30 modern casts; 16 sculptural and other exhibits; 15 pieces of French and German wood carving of the 16th century; 13 cases of North American Indian objects; 90 pieces of Fictile ivory; 194 reproductions of antique and medieval sculpture; 10 pieces of statuary and marble; 40 cases of ceramics; 36 pieces of arms and armor; 5 cases of metal work; 17 pieces of Moorish and oriental objects; 5 cases of Chinese and Japanese objects; 7 cases of textiles; 171 Arundel prints; 848 plaster reproductions of antique medallions; 149 oil paintings; and 5 water color pictures.

The following collections are loaned to Washington University and deposited by it in the City Art Museum: 4 pieces of textiles; 2 bronze busts; 21 architectural drawings; 5 pieces of statuary and marble; 125 modern casts; 4 pieces of bronze; 2 suits of armor; 189 original drawings; 5 cases of ceramics; 1 case of Indian objects; 80 oil paintings; and 15 water colors.

Historical Sketch. The City Art Museum originated in 1909 as a reorganization of the St. Louis Museum of Fine Arts, which was in turn organized in 1879. The collections purchased by the museum represent an expenditure of $33,416. The larger part of the material now in the museum is deposited by the art department of Washington University as enumerated above.

Financial Support. The City Art Museum is a city institution and receives by law the returns from a special tax of one-half mill on the dollar. The city had a population in 1909 of 761,802 and an assessed value for 1910 of over $500,000,000. This special tax amounts to about $120,000 a year and as the maintenance of the museum at present costs but about $75,000 a year the museum has acceded to a request of the city officials that the tax be passed for the year 1910.

Building. The building occupied by the museum was erected in 1903–4 by the Louisiana Purchase Exposition Company as the "Art Palace" of the World's Fair, at a cost of $943,000. It is now owned by the city and occupied by the museum as a tenant-at-will. It affords 560,000 square feet of floor space all on one floor. It contains a total of 34 galleries varying in size from 15 x 17 to 50 x 90 feet, and in the center a sculptural court 60 x 150 feet surrounded by alcoves 18 x 36 feet.

Administration. By a director, responsible to a board of control appointed by the mayor of the city.

Scope. In addition to the maintenance of its permanent collections the museum has held 25 special exhibitions of paintings and sculpture during the year 1909, the total number of exhibits being 1773. Special attention is devoted to the acquisition of a collection illustrating the development of American art.

Attendance. Open free to the public daily from 10 to 5. The attendance for the year 1908–9 was 80,389; for the year 1909–10, 113,030. The largest attendance in one day was 14,911, Sunday, October 3, 1909, between the hours of 1 and 5.

EDUCATIONAL MUSEUM OF THE ST. LOUIS PUBLIC SCHOOLS.

Staff. Director, C. G. Rathmann; Curator, Amelia Meissner; Assistant curator and librarian, Elyse Crecelius; Assistant, Chas. E. Magoon; 3 drivers and packers.

Collections. The collections are principally in the form of circulating exhibits which are sent to all the schools of the city by the museum wagons. They include the following: Food products, comprising the cereals and other food plants, and their products; coffee, tea, sugar, cacao, cocoanut, the various spices, etc. Material for clothing, including the various animal and vegetable fibers of the world and the fabrics made from them. Other natural products, as rubber, gutta-percha, camphor, cork, coal, etc., in all their various stages of development. Materials for dyeing and tanning, medicinal plants, woods, etc. Industrial products, showing the various processes in the manufacture of glass, paper, leather, ink, pens, pencils, needles, etc., besides such products as are made from the materials mentioned in the former groups. Articles and models illustrating the life and occupation of the different peoples of the world, including implements, wearing apparel, models of houses, industrial products, etc. Plants, and models and charts of plants. The animal world, represented by mounted, dried, and alcoholic specimens. Minerals, rocks, and ores. Apparatus for the illustration of physics and physical geography. Charts for the illustration of astronomy, physiology, anatomy, etc. Charts, maps, colored pictures, and objects illustrating history. Collections of art objects and models for use by classes in drawing. Photographs, stereoscopic pictures, and lantern slides to accompany the objects in the preceding groups.

An exhibit of the collections in circulation is placed in glass cases in the large museum hall of the Wyman school, as a study exhibit to enable the teachers to become thoroughly acquainted with all that the museum contains and to give them an opportunity to acquire, with the help of the museum library, such information as they need in order to use the material intelligently and profitably.

Educational exhibits, representing the schools of some of the leading countries of the world by showing the written work, drawing, manual training, etc., from the kindergarten to the high and normal schools; text books, courses of study, reports and statistics, and school appliances; photographs, plans, and models of school buildings, etc.

Specimens of the work of the pupils of the St. Louis schools in the various branches of study are exhibited, and are replaced by new work from time to time for the information of visitors.

A teachers' library of about 7000 volumes is maintained by the museum and includes the best publications on philosophy, psychology, education, school management, science, and literature; text books used in our own and other countries; reference books giving information on all the material in the museum; and the best educational journals.

HISTORICAL SKETCH. The museum was established by the board of education in 1905 as an outcome of the Louisiana Purchase Exposition held in St. Louis in 1904. Large amounts of valuable illustrative material and of educational exhibits were secured through donation or purchase from exhibitors representing all parts of the world, and these formed the nucleus of the museum. To fill in gaps in these collections, much valuable material was donated by the Field Museum of Natural History, the Smithsonian Institution, the Philadelphia Commercial Museums, and the Public Museum of Milwaukee. The board of education made a liberal annual appropriation for purchase of new material and for the general maintenance of the institution. The growth of the museum during its brief existence has been remarkable; in the first year 5000 collections were sent to the schools, in the second 11,500, in the third 22,500, and in the fourth 25,000. During the year 1908–9, the schools ordered 3368 books from the teachers' library.

FINANCIAL SUPPORT. An appropriation of $7800 from the board of education, for the year 1909–10.

BUILDING. The museum is at present housed in several rooms of Teachers College and the Wyman school.

ADMINISTRATION. By a director, who is also assistant superintendent of schools, responsible to the board of education.

SCOPE. The purpose of the museum is public school work. The material is arranged in accordance with the course of study, and is made accessible in the following manner: The schools of the city are divided into five sections. Each section has a delivery day once a week. The principal of a school which has its delivery day on Monday confers with his teachers on the preceding Friday and ascertains what material they desire from the museum to illustrate their work during the following week. On a blank issued by the museum the principal then inserts the catalog numbers of the collections his teachers desire and sends this blank to the custodian of the museum. On Monday morning the museum wagon delivers all the material ordered by that school and takes back what was used during the preceding week. Books from the teachers' library are delivered in the same manner.

PUBLICATIONS. The museum has published catalogs of the circulating collections, lantern slides, and teachers' library, with supplements to some of these.

Attendance. The museum and library are open free to teachers and pupils and to the general public on week-days from 9 to 5. The number of visitors for 1907–8 was 2770.

MISSOURI HISTORICAL SOCIETY. (1600 Locust Street.)

In addition to a historical library of about 12,000 volumes, this society maintains a museum comprising about 30,000 implements and utensils of American Indians—said to be one of the best collections of its kind in the United States; and a large collection of manuscripts and private and official documents. The museum is in charge of Idress Head, librarian, and occupies about 50,000 square feet of floor space in a three-story residence which is entirely inadequate for the proper display of the collections. It is expected that a new building will soon be available and an increased endowment. The society is at present supported by membership dues, private contributions, and the income from a small endowment. Both library and museum are open free to the public on week-days from 9 to 5.

WASHINGTON UNIVERSITY.

In connection with the science departments of the university there are teaching collections which comprise about 6000 minerals, 3000 specimens of historical rocks and ores, 3000 classified fossils and many unclassified, and about 25,000 zoölogical specimens of all classes.

The collections of the St. Louis School and Museum of Fine Arts, a department of the university, are loaned to the City Art Museum, subject to withdrawal at any time and labeled as property of Washington University.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park, established in 1903, containing 145 birds and 205 mammals.

MONTANA

BOZEMAN:

MONTANA AGRICULTURAL COLLEGE.

The department of biology has a herbarium containing 3000 cryptogams and 8000± phanerogams, including 400± types and figured specimens; in zoölogy there are 3000± insects, including 50± types and figured specimens, also 500 other invertebrates, 100 fishes, 15 batrachians, 50 reptiles, 300 birds, and 20 mammals. This collection is in charge of R. A. Cooley, head of the department, D. B. Swingle, professor of botany, and M. H. Spaulding, professor of zoölogy.

HELENA:

MONTANA STATE LIBRARY. Museum.

The library maintains a picture collection comprising 250 portraits, 35 group pictures, 80 miscellaneous pictures, and 400 photographs. There is also a rare collection of smoky quartz crystals, a series of woods and a complete collection of the flora of Montana, excellent mounted specimens of native birds and mammals, and a large accumulation of objects of historical interest. These collections are exhibited in the corridors of the state capitol building, and are in charge of W. Y. Pemberton, librarian of the State Library.

NEBRASKA

CRETE:

DOANE COLLEGE.

Small teaching collections in biology and geology, including 100 local and 50 Indian birds; 40 small mammals; representative fossils and minerals; a shell collection; and a herbarium of flowering plants. For lack of space the collections are distributed in three separate buildings, and only a part are accessible. The museum is in charge of Carl O. Carlson, professor of biology, and will be installed in a new building in about a year.

LINCOLN:

NEBRASKA STATE HISTORICAL SOCIETY. Museum.

Staff. Secretary of the society, C. S. Paine; Archeologist in charge of the museum, E. E. Blackman.

Anthropology. Uncivilized peoples: Archeology, native, 20,000, foreign, small collection; Ethnology, native, 5000, foreign, small collection. Civilized peoples, modern, 3000. There are also phonographic records of Indian music.

Art. A very small collection comprising a few paintings and portraits and 2000 photographs.

History. About 1000 objects, not increasing because of lack of space.

Historical Sketch. The museum began activity in 1901, chief attention being given to stone age implements of Nebraska and to Indian bead work.

Financial Support. The society is supported by biennial appropriations of about $15,000 from the state legislature and an income from memberships amounting to about $1100. The society expends about $1200 a year for maintenance of the museum.

Building. The museum occupies 625 square feet of floor space for exhibition in the library building of the state university. A new building for the society is under construction.

Administration. The archeologist has immediate charge of the museum under the direction of the secretary of the society, who in turn is responsible to the executive board.

Scope. The maintenance of local collections by exploration and research of the staff is the principal object of the museum.

Publications. Museum reports are included in the publications of the society, of which 13 volumes have been issued.

Attendance. Open free to the public on week-days from 8 to 5. The number of visitors is about 8000 a year.

NEBRASKA STATE MUSEUM.

Staff. Curator, Erwin H. Barbour; Assistant curator, Carrie A. Barbour. Carpenters, janitors, engineers, electricians, etc., are supplied by the University of Nebraska.

Collections. Large forestry, fiber, and grain collections; a good working collection of minerals and rocks; large collections of invertebrate carboniferous fossils, miocene vertebrates from the Bad Lands, and plants from the Dakota group; zoölogical collections chiefly from Nebraska but with some material from Bermuda and the Bahamas.

Historical Sketch. The museum has been developed by the present curator from a very small beginning in 1891. Annual collecting expeditions have been made possible through the generosity of Hon. Charles H. Morrill. The collections were at first housed in two rooms in Science Hall but increased to such an extent that the floors weakened and the material was put in storage. The one completed wing of a new fireproof building is now overcrowded and material to fill the next wing is in storage. When completed the museum will cover two or three acres on the campus of the University of Nebraska.

Financial Support. Maintained by the regents of the state university and by private subscriptions.

Building. The museum at present occupies 11,000 square feet of floor space for exhibition, and 3500 for offices, workrooms, etc. in a building erected in 1907–8 by the state at a cost of $55,000.

Administration. By a curator, responsible to the board of regents of the University of Nebraska.

Scope. The maintenance of local collections and the instruction of the general public are the purposes of the museum.

Attendance. Open free to the public on week-days from 7.30 to 5.30. The attendance during the first year was 50,000.

In addition to this museum there are teaching collections in the departments of art and botany.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park, established in 1905, containing 3 birds and 16 mammals.

OMAHA:

CREIGHTON UNIVERSITY.

The university has a teaching collection of about 700 minerals; a small collection of Indian war bonnets, implements, and arms; and an astronomical observatory equipped for student work. These collections are in charge of William F. Rigge.

OMAHA PUBLIC LIBRARY AND MUSEUM.

The museum contains the Byron Reed collection of American and foreign coins, said to rank third in value and size in the United States when it was received in 1893. This collection occupies a room affording about 1800 square feet of floor space. There is also a general museum containing loan collections of Indian and Egyptian material; a collection of birds, shells, baskets, articles from the Philippines, etc.; and a collection of pictures purchased from the Trans-Mississippi Exposition. The museum is open free to the public on week-days and the average attendance is 100 a day.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 35 acres, established in 1897, containing 7 birds and 77 mammals.

NEW HAMPSHIRE

CONCORD:

NEW HAMPSHIRE HISTORICAL SOCIETY.

The society maintains a small historical collection in charge of the librarian.

DURHAM:

NEW HAMPSHIRE COLLEGE OF AGRICULTURE AND THE MECHANIC ARTS.

The department of zoölogy and entomology maintains a representative display of the birds of New Hampshire, together with collections of invertebrate animals, skeletons, models, and geological specimens in Thompson Hall. The nucleus of this museum is the collection of the state geological survey. The collection of insects is maintained by the Agricultural Experiment Station, and comprises about 20,000 specimens.

The department of botany maintains a herbarium in Nesmith Hall.

HANOVER:

DARTMOUTH COLLEGE. Butterfield Museum.

The museum occupies about 4300 square feet of floor space for exhibition in a building which is the gift of the late Dr. Ralph Butterfield, and which also contains the science departments of the college. The collections are in charge of the members of the respective departments: C. H. Hitchcock (geology), William Patten (zoölogy), and G. R. Lyman (botany).

ANTHROPOLOGY. 500 aboriginal implements; 90 skulls and pieces of pottery of the mound builders; 400 specimens from Zululand, Alaska, and the South Sea Islands; many photographs of American Indians, and a full-size figure of Chief Joseph from the Smithsonian Institution; a few Roman antiquities; a collection of Burmese and Japanese antiquities; and 8 or 9 unusually fine sculptures from Nineveh, obtained by Dr. Wright about 1860.

BOTANY. A general herbarium of 5000 species gathered by Prof. C. H. Hitchcock and rich in ferns and marine algae; 1000 specimens of wood sections, seeds, etc.; many mosses and hepaticae; the Trelease herbarium of several thousand phanerogams and ferns; and the H. G. Jesup herbarium.

GEOLOGY. The Frederick Hall collection of 2000 minerals; 11,700 rocks, including 350 volcanic rocks from Vesuvius and the Hawaiian volcanoes; 200 massive igneous rocks; a special collection of 250 rocks from the New Hampshire geological survey; a general collection of 3500 New Hampshire and Vermont rocks; 1000 rocks from the White Mountains; 1100 from the Ammomoosuc district; 500 from the vicinity of Hanover; 200 from the vicinities of Vernon, New Hampshire, and Bernardston, Massachusetts; a set of 3000 rocks, illustrating the geology of 16 sections crossing New Hampshire and Vermont; and 1500 specimens illustrating the distribution of drift material in New England. There is also an economic collection of 2500 specimens, illustrating the occurrence of gold and silver in Montana, marbles, slates, and granites of New Hampshire and Vermont, and a series of petroleum specimens from 100 localities.

PALEONTOLOGY. An extensive collection of fossil footprints (jurassic) made by Professor Hitchcock; devonian and silurian fishes, collected by Professor Patten; one of the James Hall collections of New York fossils; and several Ward casts of large vertebrate fossils.

HOPKINTON:

NEW HAMPSHIRE ANTIQUARIAN SOCIETY.

This society maintains a collection of Indian relics, idols, old china and pewter, coins, geological specimens, manuscripts, old furniture, antique costumes, portraits, old-fashioned tools and utensils, etc. The society occupies a building erected in 1890 by Mrs. Lucia Long. The museum is installed in a large hall on the second floor and is in charge of Sarah U. Kimball, curator. The rooms are open free to the public two afternoons a week in summer, but are seldom open in winter for lack of heat and light.

KEENE:

KEENE HIGH SCHOOL.

The principal reports that the school has teaching collections comprising a herbarium of 500 specimens of flowering plants and ferns of New Hampshire, 2000 minerals, 150 fossils, and 3000 zoölogical specimens, including mounted mammals and birds, skulls and skeletons, shells and insects, and a small series of corals and reptiles.

MANCHESTER:

MANCHESTER HISTORIC ASSOCIATION. (452 Merrimack St.)

This association has a small historical collection in connection with its library.

MANCHESTER INSTITUTE OF ARTS AND SCIENCES.

In addition to class work in fine arts, handicraft, etc., the institute has a herbarium of 3000 sheets of local phanerogams, in charge of Frederick W. Batchelder, and a fairly extensive collection of insects, in charge of E. J. Burnham. In 1902 the institute lost by fire a more extensive museum of mineralogy, zoölogy, and botany. The collections are in charge of William H. Huse, curator.

NEW JERSEY

FLEMINGTON:

HUNTERDON COUNTY HISTORICAL SOCIETY.

The society has a small historical collection now in storage, awaiting the erection of a new library building.

HACKENSACK:

BERGEN COUNTY HISTORICAL SOCIETY.

This society maintains a museum of local historical material, including household and similar utensils; letters, diaries, manuscripts, deeds, and other legal documents; revolutionary war relics; costumes; and a collection of Indian arrowheads and implements. There is also a valuable musical collection, including a very old harpsichord. The museum is receiving frequent additions.

NEWARK:

NEW JERSEY HISTORICAL SOCIETY. (16 West Park Street.)

The society maintains a small museum comprising for the most part objects of local historical interest.

THE NEWARK MUSEUM ASSOCIATION. The Newark Museum.

The property of the museum at present occupies rooms in the public library, and consists of a collection of Japanese art objects, numbering about 2000 specimens; lacquers; prints; porcelains, both Chinese and Japanese; paintings; textiles; armor; ivories; and metal work, bought by the city and held in trust by the Museum Association for the people of the city of Newark.

The Newark Museum Association is a corporation formed in April, 1909, to establish a museum for the reception and exhibition of articles of art, science, history, and technology, and for the encouragement of the study of the arts and sciences.

The museum was opened to the public on February 24, 1910. At that time the Japanese collection and a loan collection of American paintings and sculpture were shown by the museum.

The control is vested in a board of trustees. There is at present no fixed appropriation for maintenance. The income is from a system of membership.

The museum publishes a bulletin, "The Newark Museum," vol. 1 beginning February, 1910.

NEW BRUNSWICK:

RUTGERS COLLEGE. Museums.

STAFF. Curators, J. A. Volney Lewis (geology), J. C. Van Dyke (art); Assistant Curator, W. S. Valiant (geology).

ANTHROPOLOGY. The Frazee collection of about 1500 paleolithic and neolithic implements and ornaments.

ART AND BOTANY. No information received.

GEOLOGY. Minerals, on exhibition, 14,000, in storage, 4000; Rocks, 2500. This department includes the Lewis C. Beck collection of 3000 minerals, which has remained intact from the period of its collection, 1820–1847, and the Albert H. Chester collection of 5000 minerals. New Jersey material forms a large part of these collections.

PALEONTOLOGY. Invertebrates, 5750±; Vertebrates, 250; Plants, 250. There are in storage, 1000± invertebrate and vertebrate fossils, and 150 type and figured specimens. Exhibits of special interest include the Mannington mastodon, said to be the largest specimen known; and a slab of triassic sandstone, 8 x 18 feet, from Morris County, New Jersey, showing the footprints of 15 species of dinosaurs.

ZOÖLOGY. Shells, 17,000±. There are also a Japanese spider crab, *Marocheirus camperi*, said to be the largest known; a mounted skeleton of a right whale; and a general teaching collection.

HISTORICAL SKETCH. The nucleus of the museum is the collection of the students' natural history society of Rutgers College, founded in 1857 by the late Dr. George H. Cooke. The museum was the headquarters of the state geological survey from 1864 to 1889, while Dr. Cooke was state geologist, and thus acquired full collections of the rocks, minerals, and fossils of the state.

FINANCIAL SUPPORT. From the general funds of the college.

BUILDING. The geological museum occupies a building erected by the college in 1871 at a cost of $63,000, and providing 4704 square feet of floor space for exhibition, and 768 for offices, etc. The art and botanical collections, and the zoölogical teaching collections are housed in the rooms devoted to those departments.

SCOPE. College teaching, exploration, research, maintenance of local collections, and instruction of the general public.

LIBRARY. The geological museum has a reference collection of about 1000 volumes intended for the use of the staff and students.

ATTENDANCE. Open free to the public daily except Sundays. The attendance is estimated at 2000 a year exclusive of students.

PRINCETON:

PRINCETON UNIVERSITY. Museum.

STAFF. Executive committee, William Libbey (chairman), Gilbert Van Ingen (secretary), C. E. W. McClure, W. M. Rankin, A. H. Phillips. Department of geology: Curators, William Libbey (director of E. M. Museum of Geology and Archaeology), Marcus S. Farr (vertebrate paleontology), Gilbert Van Ingen (invertebrate paleontology), W. J. Sinclair (geology), A. H. Phillips (mineralogy). Department of biology: Curators, W. M. Rankin (botany), C. E. Silvester (zoölogy), W. E. D. Scott (ornithology). 3 janitors.

ANTHROPOLOGY. America is represented by the pottery and human remains of the mound builders; by several hundred specimens of Mexican and Peruvian pottery; and by a number of recent Indian relics. The ethnological collections, chiefly from Alaska and New Mexico, presented by Dr. Sheldon Jackson to the Theological Seminary of Princeton, have been transferred to this museum by the trustees of that institution, with the consent of the donor. There is also a series of models of the cliff dwellings and pueblos of the Southwest. Extensive series of anthropological material, comprising household utensils, hunting implements, etc., illustrating very fully the domestic life of the Esquimau of the West Greenland coast. A collection of relics from the Swiss lake dwellings representing fully the various localities in Switzerland, particularly Neuchâtel, and containing a large number of type specimens from the collection of Dr. Gross, who for a long time was associated with the work of recovering these relics from the dwelling sites in the Swiss lakes. Localities in Norway and Denmark representing the culture of this same epoch are also represented.

An extensive collection, gathered by the Rev. Robert Hamill Nassau, of the class of 1854, at Batanga, West Africa, illustrates in full the dress, implements of warfare, household utensils and articles of adornment of the natives of the German Possessions in the Cameroon.

BOTANY. These collections include, beside certain illustrative specimens, models, and charts, a herbarium of mounted plants, comprising 4000 sheets of New Jersey flora; some 40,000 sheets of plants from the United States, South America, Europe, and Asia; and 10,000 sheets of mosses, recently acquired from Dr. Per Dusén of Sweden.

GEOLOGY. Minerals, on exhibition, 2000±, in storage, 5000±; teaching collections in petrology and economic and structural geology, about 10,000 stratigraphic geology, about 10,000; relief maps, models, etc., 1000. The collections contain a unique series of about 10,000 specimens of erratic boulders gathered by the late Dr. Arnold Guyot during his studies of the glaciers of Switzerland. Typical rocks and fossils represent the stratigraphic series described by the geological surveys of New Jersey and New York. A collection of minerals, chiefly crystals, bequeathed to the university by the late Archibald MacMartin of New York, is noteworthy because of the perfection of the specimens and the number of localities represented in each species. The collections in economic and structural geology and petrology stand in tray racks in the laboratories, are designed chiefly for use in laboratory instruction, and to that end are arranged in accordance with the systems adopted in the text-books used. The series illustrating the courses in structural geology and economic geology from the theoretical point of view are especially interesting.

PALEONTOLOGY. Invertebrates, on exhibition, 7000±, in storage, 100,000±, types and figured specimens, 400; Vertebrates, on exhibition, 1000±, in storage, 3000±, types and figured specimens, 500±; Plants, on exhibition, 1000±, in storage, 5000±, types and figured specimens, 100±. The collections include skeletons of a mastodon, an Irish deer, a cave bear, and some of the extinct birds of New Zealand, as well as the skulls of *Uintatherium* and a remarkably complete and unique skeleton of *Cervalces* from northern New Jersey. A synoptic collection of vertebrate and invertebrate fossils from North America and Europe illustrates the principal organic forms of the geological epochs. Included in this series are the tertiary fossils, many of which are type specimens, gathered in the West by the various Princeton expeditions. An extensive series of fossil insects and plants from the oligocene shales of Florissant, Colorado, includes many of the types described by Lesquereux.

Among recent acquisitions there are extensive series of miocene fossils from Yorktown, Virginia; collections illustrating the stratigraphic paleontology of the Appalachian region; and the collections of vertebrate and invertebrate fossils secured by Hatcher and Peterson from miocene strata of Patagonia, now being studied and described by several authors in the reports of the Princeton University expeditions to Patagonia, edited by Professor William B. Scott and published by the university. The paleobotanical material is enriched by the Mansfield collection of carboniferous plants from Pennsylvania.

ZOÖLOGY. These collections are especially rich in osteological and ornithological material. The former includes a large number of mounted and disarticulated skeletons of fishes, reptiles, birds, and mammals. The collections of mounted and unmounted bird skins include some 16,000 individuals, representing very completely the avifauna of New Jersey, and in part that of North America, Europe, Indo-Asia, Australia, and South America. There are also about 4000 sets of eggs, most of them in nests. The morphological collections contain about 2600 preparations, illustrating the comparative anatomy of vertebrates. These are being increased at the rate of about 300 preparations a year. The histological collections contain some 30,000 mounted microscopical specimens illustrating the various forms of tissues of many different animals; some 5000 specimens are stored in paraffin blocks.

Historical Sketch. The museum contains the collections formerly included in the E. M. Museum of Geology and Archaeology, the storerooms of the department of geology, the museum of biology, the class of 1877 morphological museum, and the mineralogical museum of the John C. Green School of Science. The task of consolidating and arranging these collections is not yet completed.

Financial Support. By endowment and by appropriations from the university.

Building. The museum occupies the ground floor of Guyot Hall, the new natural science building, erected in 1909, at a cost of about $425,000. About 19,650 square feet of floor space is available for exhibition, and about 5921 will be used for offices, workrooms, etc.

Administration. The museum is in charge of an executive committee of faculty members of the departments of natural science, the details of administration being not yet determined.

Scope. It is the object of the staff to build up exhibits illustrating the subjects taught in the departments of natural science and the lines of investigation carried on by the members of the instructing staff and the graduate students.

Library. The library, located on the second floor of Guyot Hall, has a reading room space of 625 square feet and lateral stacks holding the working libraries of the biological and geological sciences, with capacity for about 10,000 volumes.

Publications. The E. M. Museum of Geology and Archaeology has published a series of Bulletins, begun in 1878, and a series of Contributions. Biological investigations are published in the Contributions from the Biological Laboratory of Princeton University.

PRINCETON UNIVERSITY. Museum of Historic Art.

The collections include casts of ancient, medieval, and renaissance sculpture, presented by the class of 1881; the Turnbull-Prime collection illustrating the history of pottery and porcelain, especially rich in examples of European wares; the Livingston collection of pottery, noteworthy for the illustrative material it furnishes for the early history of our country; a library of books and photographs of classical and medieval archeology; collections to illustrate the history and processes of the graphic arts; reproductions of Greek and Roman coins and gems; specimens of Greek and Roman marble; bronze medals and casts of ivories from the Roman to the Gothic period; a series of casts from the Arch of Trajan at Beneventum; a small collection of paintings and sculptures; and exhibits of the results of the Princeton expedition to Syria.

The museum is in charge of Allan Marquand, director, and is open to visitors from 8 to 6.

SALEM:

SALEM COUNTY HISTORICAL SOCIETY.

The society has a historical collection comprising pewter plates brought from England by Samuel Hedge in 1675, when the colony was settled; 200± original deeds from 1675 to 1775; original wills from 1705 on; an album of photographs of colonial houses in Salem County; files of Salem newspapers from 1819; and a small collection of Indian relics, minerals, and other articles of local interest.

TRENTON:

NEW JERSEY STATE MUSEUM.

Staff. Curator, S. R. Morse.

Anthropology. 612 specimens, including Indian relics and a small Philippine collection.

Botany. Over 2000 specimens, not at present arranged for exhibit. The material contains 160 specimens of New Jersey woods, including the leaves, flowers, and fruits of the trees, and a complete collection of 136 marine algae, made by the curator from the New Jersey coast.

Education. School exhibits, including exhibits of school work sent to the expositions at Philadelphia, in 1876, at New Orleans, in 1885, at Chicago, in 1893, at Buffalo, in 1901, at Charleston, in 1901–2, at St. Louis, in 1903, and at Jamestown, in 1907.

Geology. Minerals, on exhibition, 325, in storage, 1675; Rocks, on exhibition, 355, in storage, 4145; Economic geology, on exhibition, 569, in storage, 775; Relief maps, models, etc., 18. The mineral series contains chiefly local material. The rocks are arranged stratigraphically and are accompanied by descriptions and maps. The economic series includes ores, cement, clay, sand and gravel, marl, soil, and building stones, and is accompanied by descriptions and maps showing localities from which they are obtained.

History. Maps, charts, photographs, and prints.

Paleontology. Material on exhibition, 3400±, types and figured specimens, 905±. The material is arranged stratigraphically and is accompanied by descriptions and maps showing outcrops of the formations in which the fossils occur. The most notable feature of the exhibit is a plaster cast of skeleton of *Hadrosaurus* from the cretaceous near Haddonfield.

Zoölogy. Shells, 284 (from the New Jersey coast); Insects, 550; Fishes, 103; Reptiles, 50; Birds, 607; Mammals, 114; Bird eggs, 576; Bird nests, 104. There are 25 large groups and 160 small groups of animals exhibited in natural surroundings, including a large part of the bird material.

Historical Sketch. Established in 1895, the nucleus being the exhibit of the state at the Columbian Exposition. A curator was appointed and the exhibits housed in a corridor and two attic rooms in the state house. In 1900, the legislature made an appropriation for an addition to the state house, and the third floor was finished for the museum in the winter of 1901.

Financial Support. An optional appropriation of $3000 per annum from the state legislature.

Building. About 5100 square feet of floor space is available for exhibition, and 380 for offices, workrooms, etc., in a portion of the state house erected in 1900.

Administration. By a curator, who is responsible to a museum commission.

Scope. The chief purpose of the museum is to assemble local collections illustrating the scientific resources of the state for the instruction of the general public and the pupils of the public schools. The work with the public schools is one of its most profitable departments.

Publications. Reports of the New Jersey State Museum, of which 7 have been issued.

Attendance. Open free to the public on week-days, except Saturday afternoons, from 9 to 5.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 10 acres, established in 1888, containing 8 reptiles, 140 birds, and 71 mammals.

VINELAND:

VINELAND HISTORICAL AND ANTIQUARIAN SOCIETY.

The society has a collection of miscellaneous curiosities and relics, some of which are of local historical value.

WOODBURY:

HISTORICAL SOCIETY OF GLOUCESTER COUNTY.

The society has a small museum of local historical relics, books, rare coins, etc., and looks forward to the purchase of a fireproof building and the extension of its collections.

NEW MEXICO

SANTE FE:

HISTORICAL SOCIETY OF NEW MEXICO.

The biennial report of this society issued in 1909 shows that it maintains a historical museum and a mineral exhibit in the "Old Palace." No reply has been received from requests for further information.

NEW YORK

ALBANY:

ALBANY INSTITUTE.

Staff. Director, Edward K. Parkinson; 1 stenographer, 1 assistant superintendent of building, 1 helper, and 1 night watchman.

Art. Sculpture, 60; Prints and engravings, 50±; Oil paintings, 150; Water colors, 5; Ceramics, 3000; Textiles, 25; Furniture, 75.

History. This collection includes local coats of arms and bookplates; framed portraits of Albany mayors, New York governors, United States presidents, etc.; and books by citizens of Albany.

Historical Sketch. The society dates back to 1791 and has existed under a variety of names. The present organization was formed in 1900 by the consolidation of the Albany Institute and the Albany Historical and Art Society. The latter was formed in 1897–8 as an outgrowth of the Albany Historical Society, which originated in 1886.

Financial Support. Income from endowment, $300, from city appropriation, $1500. The city appropriation is optional. Additional funds are derived from fees of members who pay $5 per year with special rates for more than one person in a family, out-of-town members, clergymen, educators, etc. A further income is obtained from admission fees.

Building. Erected in 1908 at a cost of $125,000 paid for by subscription.

Administration. By a board consisting of a house committee, director, and executive committee.

Scope. Special emphasis is laid upon local collections, supplemented by lectures.

Library. 2000 volumes, pertaining to history, with special emphasis upon publications of local interest. Open to members and the public.

Publications. 12 volumes of Proceedings published between 1800 and 1893.

Attendance. Open week-days from 9 to 5 and on Sundays from 2 to 5. Free on Saturdays and Sunday afternoons. On other days an admission of 25 cents is charged. Attendance is estimated at 50,000 annually.

NEW YORK STATE MUSEUM.

Staff. Director, John M. Clarke (also state geologist and paleontologist); State botanist, Charles H. Peck; State entomologist, E. Porter Felt; Zoölogist, F. H. Ward; Archeologist, A. C. Parker; Mineralogist, H. P. Whitlock; Ornithologist, E. H. Eaton; Assistant state geologist, D. H. Newland; Assistant geologist, C. H. Hartnagel; Assistant state paleontologist, R. Ruedemann; Assistant state entomologist, F. T. Hartman; Assistant state botanist, S. H. Burnham; Assistants, Henry Leighton and H. C. Wardell (geology); Taxidermist, A. J. Klein; 12 temporary scientific assistants, and 6 clerks and stenographers.

Anthropology. Archeology of New York, 6000; Ethnology of New York, 500. A series of Iroquois groups is in preparation, comprising life-size casts representing domestic and civil life of the Iroquois nation; this will include not less than 40 figures and constitutes the Myron H. Clark museum of Iroquois culture.

Botany. Cryptogams, 80,000, types and figured specimens, 2000+; Phanerogams, 20,000, types and figured specimens, 3500±; Special collections of fungi, 2500; Tree trunk sections, 106.

Commerce and Industry. Series showing development of natural mineral products from the crude to the finished state.

Geology. Minerals, on exhibition, 6400, in storage, 10,000; General geological collection, on exhibition, 2500, in storage, 10,000; Relief maps, 14. This section is organized as the New York state geological survey.

History. A historical department has recently been inaugurated and will be devoted to the presentation of successive cultures in New York State.

PALEONTOLOGY. Invertebrates, on exhibition, 10,000, in storage, 500,000, types and figured specimens, 9000; Vertebrates, on exhibition, 200, in storage, 200, types and figured specimens, 50; Plants, on exhibition, 500, in storage, 500, types and figured specimens, 100. This collection includes the Cohoes mastodon (mounted), the Monroe mastodon (unmounted), and a nearly complete skeleton of the Irish elk.

ZOÖLOGY. Shells, on exhibition, 14,000, in storage, 86,000, types and figured specimens, 438; Insects, on exhibition, 5700, in storage, 134,000, types and figured specimens, 2200; Other invertebrates, on exhibition, 190, in storage, 8800; Fishes, on exhibition, 251, in storage, 1700; Batrachians, on exhibition, 33, in storage, 300; Reptiles, on exhibition, 53, in storage, 150; Birds, on exhibition, 1187, in storage, 1113; Mammals, on exhibition, 194, in storage, 116. This department contains the R. W. Shufeldt collection of 384 avian skeletons, including the types of his demonstration. There are 7 large and 10 small groups of animals exhibited in natural surroundings.

HISTORICAL SKETCH. The New York State Museum was organized as the New York State Cabinet of Natural History. The nucleus of the collections is the material gathered in the natural history survey of the state made between 1836 and 1843. In 1870 the legislature established the State Museum of Natural History and provided for an annual appropriation of $10,000 with an additional sum of $1500 for the salary of a botanist. In 1883 by action of legislature the state geologist and paleontologist, the state botanist, and the state entomologist were associated with the state museum, and the whole was placed under the charge of the regents of the University of the State of New York. In 1889 the state museum was made an integral part of the university.

FINANCIAL SUPPORT. The museum receives an annual appropriation from the state legislature amounting to about $40,000.

BUILDING. A new building is in course of erection by the state at a cost of $3,500,000 which will provide 100,000 square feet of floor space for museum exhibition and offices. This building will also contain the state library and the administrative offices of the department of education.

ADMINISTRATION. By a director, responsible to the commissioner of education.

Scope. The museum is an organization for research and for the preservation of research collections. Its field is the state of New York.

Library. A fairly extensive library belonging to the museum is combined with the state library.

Publications. The series of annual museum reports contains all the publications of the institution. The reports of the director and the division heads, as well as special treatises, are published in advance as bulletins; 8–10 of these are issued annually. More elaborate treatises are published as memoirs, and issued as advance parts of the annual reports. The total number of annual reports issued is 62; the number of bulletins since 1892 is 127; of memoirs, 12; and of other publications, 100±.

Attendance. Open free to the public.

ALFRED:

ALFRED UNIVERSITY. Allen Steinheim and Museum of Natural History.

Staff. Curator, James D. Bennehoff, who is also in charge of the department of natural science and gives only a part of his time to the work of the museum.

Anthropology. Archeology, native, 2000±, foreign, 1000±; Ethnology, native, 500±, foreign, 200±; Coins, 1436.

Art. Sculpture, 25 (mostly plaster casts); Prints and engravings, 100 (local); Oil paintings, 25 (local); Ceramics, 500; Textiles, 100.

Botany. Cryptogams, 150±; Phanerogams, 1000±.

Geology. Minerals, 2000; Rocks, 250; Economic collections, etc., 2000±; Special collections illustrating the Chemung. The building is constructed of many different kinds of stone from local glacial deposits, and a variety of woods in natural finish.

Paleontology. Invertebrates, 800±; Vertebrates, 400±; Plants, 200±; Unclassified, 1000. The collections are especially rich in devonian material.

Zoölogy. The shell collection includes 1000 marine species, 500 univalves, and 200 unionidae. Insects are represented by 2000 species, poorly preserved. These two collections are strong in local material. Other invertebrates, fishes, batrachians, and reptiles are represented by small collections. There are also 122 species of birds and a number of mammals.

Historical Sketch. The museum originated in collections of President Jonathan Allen of Alfred University, who died in 1892. He intended to leave the museum to the university but made no will, and the museum was finally purchased from his heirs. Practically no records of the earlier years of the museum were left and the lack of a curator resulted in still further confusion, which is being remedied as rapidly as possible by the present curator.

AMSTERDAM:

MONTGOMERY COUNTY HISTORICAL SOCIETY.

The society maintains a historical museum in charge of W. Max Reid, curator and librarian, and Alfred Child, custodian. The collection includes the Richmond collection of 20,000 aboriginal implements, purchased for the society by Mr. Stephen Sanford at a cost of $5000. There are also many pieces of rare colonial furniture, and a library of rare books and documents. The museum is maintained for educational purposes, and occupies a baronial mansion erected in 1742 and known as Fort Johnson since 1755. It affords about 1600 square feet of floor space for the museum and was purchased for the society in 1906 by Major-general J. Watts dePeyster at a cost of $6000. The society receives an income of $400 annually from the Stephen Sanford endowment and $400 from membership fees. The building is open free to the public on Friday, Saturday, and Sunday from 2 to 6.

AURORA:

WELLS COLLEGE.

The college has a collection of geological specimens, fossils and shells, which has not been put in order since removal to a new building. A small teaching collection is in use in the department of biology.

BINGHAMTON:

BROOME COUNTY HISTORICAL SOCIETY.

The society maintains a collection of papers, maps, deeds, Indian pottery and implements, and other material of local historical interest, in the Binghamton Public Library and in charge of William F. Seward, custodian.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of one and a half acres, established in 1878, containing 7 birds and 53 mammals.

BROOKLYN:

BROOKLYN INSTITUTE MUSEUM.

STAFF. Curator-in-chief, Frederic A. Lucas; Honorary curator of natural science, Alfred G. Mayer; Curators, William H. Goodyear (fine arts), Stewart Culin (ethnology), E. L. Morris (natural science), Susan A. Hutchinson (books), Jacob Doll (entomology), George K. Cherrie (ornithology); Associate curators, Charles Schaeffer (entomology); Assistant curators, A. D. Savage (fine arts); Artist, Herbert B. Judy; Chief taxidermist, J. W. Critchley; Superintendent of buildings, T. F. Casey; 7 clerks and stenographers, 12 preparators and mechanics, 7 engineers, firemen, and electricians, and 21 attendants, cleaners, and watchmen.

ANTHROPOLOGY. 7500± specimens illustrating very fully the customs and occupations of the Pueblo Indians of the Southwest and of the California Indians; also some from the Haida and related tribes; small collections from Japan, China, and Siam.

ART. Sculpture, 39; Oil paintings, 213; Water colors, 442; Ceramics, European, 569, Chinese, 50, Japanese, 191, Corean, 98, Saracenic, 7, Moresque, 109, Greek, 64, Italic and Etruscan, 22, casts from antique pottery moulds, 57; Textiles, European lace, etc., 22, Egyptian, 19; Chinese and Japanese lacquers, 131, bronzes and other metals, 17, ivories, 50, wood carvings, 10, miscellaneous art objects, 9; Egyptian antiquities, 2675; Chaldaeo-Assyrian, 385; Greek and Italian bronzes, etc., 19; Replicas of Mycenaean metals, 12; Greek and Roman jewelry, 224; Greek terra cottas, 31; Etruscan and Roman terra cottas, 8; Roman mosaics, 21; Photographic enlargements of European architecture, 640; Surveys of European architecture, 60.

BOTANY. Cryptogams, 7000; Phanerogams, 23,000.

GEOLOGY. Minerals, on exhibition, 4025, in storage, 3050; Rocks, on exhibition, 130±, in storage, 950; Relief maps, 50±.

PALEONTOLOGY. Invertebrates, in storage, 4000±. There is also a fairly complete mastodon from Newburgh and a few other vertebrate fossils.

ZOÖLOGY. Shells, on exhibition, 3755±, in storage, 50,000±; Insects, on exhibition, 4000±, in storage, 50,000±, types, 1242, figured specimens, 64; Other invertebrates, on exhibition, 1000±, in storage, 2000±; Fishes, on exhibition, 175, in storage, 600±; Batrachians, on exhibition, 25, in storage, 100±; Reptiles, on exhibition, 80, in storage, 375±; Birds, on exhibition, 500±, in storage, 5500±, types, 11; Mammals, on exhibition, 250, in storage, 1000±. There are 15 small and 15 large groups of animals exhibited in natural surroundings.

HISTORICAL SKETCH. The nucleus of the museum is to be found in a collection of birds, fishes, and shells exhibited by the old Brooklyn Institute as early as 1854. The present museum was organized in 1889 and is maintained as a public institution under the auspices of the Brooklyn Institute of Arts and Sciences.

FINANCIAL SUPPORT. The museum receives an optional city appropriation which amounted in 1909 to $103,905, including $12,000 which was allotted to the Children's Museum. Money appropriated by the city cannot be used for the purchase of specimens, but is devoted to the expense of maintenance. A fund amounting to about $8000 a year is raised for the purchase of specimens, supplemented by special subscriptions for special purchases. The interest of the John D. Woodward memorial fund, about $1125, is used for the purchase of paintings by American artists. The Ella C. Woodward fund yields about $1125 for purchase of other art objects. The Frederic Loeser fund yields about $450 for the purchase of photographs and casts of famous works of art. The Caroline H. Polhemus fund yields about $400 for the maintenance and increase of the Polhemus collection. The Frank Sherman Benson fund yields about $425 for general additions to the museum collections. About $300 is received from admission fees.

BUILDING. In 1891 the city was authorized to expend $300,000 for the erection of a museum building; work was begun in 1895 and the first section opened in 1897; the second or central section was opened in June, 1907, and the east wing in December, 1907. The cost of the building to date is somewhat over $1,794,000. This represents less than one-fourth of the space to be occupied ultimately; at present there are 68,386 square feet of floor space available for exhibition, and 37,000 for offices, workrooms, etc.

ADMINISTRATION. By a curator-in-chief, responsible to the board of trustees of the Brooklyn Institute of Arts and Sciences as represented by an executive committee.

SCOPE. Research and public instruction are the principal purposes of the museum, the latter being the more important activity at present.

LIBRARY. At the beginning of 1909 the library contained 17,298 volumes on art and science for the use of both staff and public for reference work only.

PUBLICATIONS. (1) Science Bulletin; each volume contains about 400 pages, 1 volume having been issued at the end of 1909. (2) Memoirs of Natural Sciences, 1 part issued. (3) Memoirs of Art and Archaeology, 3 parts issued. (4) Catalogs and guides, 6 issued. (5) Annual Reports, beginning with the year 1904. (6) Museum News, published monthly from October to May, 4 volumes issued. (7) Miscellaneous, 3 issued.

ATTENDANCE. Open to the public daily except Sunday from 9 to 6; Sunday afternoon from 2 to 6; Thursday evening from 7.30 to 9.45.

On Mondays and Tuesdays an admission of 25 cents for adults and 10 cents for children under 16 is charged.

CHILDREN'S MUSEUM. (Bedford Park.)

STAFF. Curator, Anna B. Gallup; Assistant Curators, Mary Day Lee, George P. Englehart; Librarian, Miriam S. Draper; Assistant librarian, Alison J. Baigri; Clerk, Marguerite Carmichael; 1 janitor, 1 attendant, 1 messenger, and 2 cleaners.

ART. 150± photographs of famous paintings and buildings.

BOTANY. An educational exhibit of plant models, colored plates and preserved specimens, illustrating plant structure and germination.

GEOGRAPHY. Models showing the relation of primitive man to environment in different zones; Dolls dressed in peasant costumes; Relief maps, photographs, etc.

GEOLOGY. 325 minerals and rocks. These include principally the minerals and rocks described in the public school courses of study. There are also 13 colored charts showing glaciers, earthquakes, geysers, deserts, avalanches, water-spouts etc.; a small collection of volcanic products; and a collection of 80± gems.

HISTORY. Historical relics and pictures, and a series of models illustrating colonial life. The models consist of dolls dressed in appropriate costumes and surrounded with careful reproductions of the houses, furniture, etc. of the period represented.

ZOÖLOGY. Shells, 1000+; Insects, on exhibition, 640+, in storage, 5000+; Other invertebrates, 400; Fishes, 50; Batrachians, 100; Reptiles, 75; Birds, on exhibition, 500, in storage, 200; Mammals, 150. There are 6 large and 6 small groups of animals exhibited in natural environment.

HISTORICAL SKETCH. The Children's Museum began its work in a residence leased as a temporary storeroom by the Brooklyn Institute of Arts and Sciences. Upon the opening of the central museum (Brooklyn Institute Museum) this residence was continued as a branch museum for children. The first exhibits were opened in December, 1899; since that time the exhibits and the popularity of the work of the museum have increased so that a new building is very much needed.

FINANCIAL SUPPORT. The Children's Museum receives $12,000 annually from the appropriation made by the city for the maintenance of the Brooklyn Institute Museums. The grounds are cared for by the department of parks; specimens are purchased from a collection fund composed of private donations.

Building. The museum occupies 5000 square feet of floor space for exhibition, and 700 for offices, workrooms, etc.

Administration. By a curator, responsible to the curator-in-chief of the Brooklyn Institute Museums.

Scope. Public school work is the primary purpose of the museum. Colored charts, mounted birds, and boxes containing life histories of insects are loaned to teachers for classroom use, the teachers calling to select the material and arranging for its transportation to and from the school. A lecture is given at least once a week for each grade of the public schools, with special lectures to any class upon request. Physical apparatus is provided for experiments at the museum and a wireless telegraph station has been established and maintained by young men interested in the subject, five of whom have qualified as expert wireless telegraph operators through individual experimenting at the museum without formal instruction. A description of the work of the Children's Museum was published by the curator in the "Proceedings of the American Association of Museums," Vol. I.

Library. About 6000 volumes on natural science, biography, geography, history, and art intended for use as a reference library by both staff and public. The library is frequently consulted by students and teachers of all ages as well as by children.

Publications. A section of the "Museum News," issued monthly from October to May by the Brooklyn Institute Museums, is devoted to the Children's Museum. The annual reports of the curator are printed with the reports of the curator-in-chief.

Attendance. Open free to the public on week-days from 9 to 5.30 and on Sundays from 2 to 5.30. The average annual attendance is 102,000, including an attendance of 18,700 on lectures.

LONG ISLAND HISTORICAL SOCIETY. (Pierrepont and Clinton Streets.)

In addition to an extensive library this society maintains a museum under the care of Mary E. Ingalls, assistant curator, the office of curator being vacant. The museum includes a large collection of Indian implements and relics from Long Island; the C. L. Allen collection of arrowheads and other Indian implements from Illinois, Kentucky, Arkansas, Kansas, Minnesota, and Oregon; the Beebe collection from graves at Ancon, Peru; the Scarborough collection of general and local botany; an extensive collection of minerals and rocks from the boulder drift of Long Island; minerals and fossils from the New York State Museum; the Pike collection of East Indian shells; and a collection of Long Island birds. One of the most valuable possessions of the museum is a mounted Labrador duck.

POLYTECHNIC INSTITUTE OF BROOKLYN.

The institute does not maintain a museum but has the John Milton Smith collection of minerals, occupying a wall case about 25 feet in length and 7 shelves high.

BUFFALO:

BUFFALO FINE ARTS ACADEMY. Albright Art Gallery. (Delaware Park.)

STAFF. Acting director, Cornelia B. Sage; 1 stenographer, 1 assistant, 1 superintendent, and 4 guards.

ART. Oil paintings, 241; Engravings and etchings, 657, including the Willis O. Chapin collection of engravings and the James collection of etchings; Arundel prints, 62; Cartoons, 15; Drawings, photographs, etc., 66; Medals and plaquettes, 6; Miniatures, 10; Sculptures and casts, 39; Miscellaneous, 38.

HISTORICAL SKETCH. The Buffalo Fine Arts Academy was organized in 1862 and an art gallery was opened in American Hall. After occupying a number of other buildings the present Albright Art Gallery was dedicated in 1905. This building was erected by Mr. J. J. Albright at a cost of about $400,000 and provides approximately 19,190 square feet of exhibition floor space in addition to an auditorium.

FINANCIAL SUPPORT. By the income from a maintenance fund of $140,000 and a city appropriation which amounted in 1909 to $12,000.

ADMINISTRATION. By an acting director, responsible to a board of 29 trustees.

SCOPE. Instruction of the general public is the chief aim of the art gallery. 22 special exhibitions of paintings and bronzes were given in 1909.

LIBRARY. 45 volumes on art.

PUBLICATIONS. (1) Catalogs. (2) Academy Notes, issued monthly since June, 1905. (3) Bulletin, issued quarterly, since 1910. (4) Blue Book, issued annually.

ATTENDANCE. The galleries are open to the public daily from 10 to 5.30 except on Sundays and Mondays, when the hours are 1 to 5.30. Admission is free except on Sunday and Monday, when a fee of 25 cents is charged. The attendance for 1909 was 113,676.

BUFFALO HISTORICAL SOCIETY.

This society, of which Frank H. Severance is secretary and treasurer, maintains museum collections obtained by gift and incidental to its primary work of historical research and publication.

The collections include Indian implements; household articles of pioneers; portraits and views of local interest; war relics; domestic articles from Hawaii, the Philippines, Cuba, Alaska, etc.; casts of Egyptian and Assyrian tablets; coins and medals. The library comprises 30,000 volumes of a historical nature and is open free to the public, together with the museum, on week-days from 10 to 5 and on Sundays from 2 to 5. The society occupies a building erected in 1900 at a cost of $200,000 defrayed jointly by the state, the city, and the society. It receives a maintenance appropriation from the city but this is not available for increase of the museum. 14 volumes of publications have been issued, but these are not directly related to the museum.

BUFFALO SOCIETY OF NATURAL SCIENCES.

STAFF. Superintendent, Henry R. Howland; Lecturer, Carlos E. Cummings; Custodian of museum, William L. Bryant; 1 stenographer, 1 janitor, and 1 caretaker.

ANTHROPOLOGY. Archeology, native, 6000±, foreign, 300±; Ethnology, native, 500±, foreign, 1000±. Of special interest are the local collections illustrating the characteristics of each important village site in Erie County, New York, and a collection of 300 specimens of pottery from Chiriqui, Central America.

BOTANY. Cryptogamic and phanerogamic herbaria, 25,000±.

COMMERCE AND INDUSTRY. Several collections illustrating the manufacture of marketable goods from natural products, as iron, steel, copper, pearl, mineral dyes, etc.

GEOLOGY. Minerals, 3000± on exhibition and a large number in storage; Rocks, 2500± on exhibition and many in storage. Special mention may be made of the Wadsworth collection of minerals, mostly from European localities and especially rich in fine groups of fluorite, calcite, quartz, etc. One room is devoted to the geology of Buffalo and vicinity.

PALEONTOLOGY. There are on exhibition 10,000± invertebrate, vertebrate and plant fossils, with a large number in storage and many types and figured specimens. The collection of crustaceans from the Waterlime group in the vicinity of Buffalo is especially important and includes some 80 varieties and over 250 specimens of *Pterygotus*, *Eurypterus*, and *Ceratiocaris*.

ZOÖLOGY. Shells, 12,900; Insects, 6000±; Other invertebrates, 378; Fishes, 242; Reptiles, 123; Birds, 1100±; Mammals, 75; Bird eggs, 700±; Osteology, 33. 10 large groups are exhibited in natural surroundings; especially noteworthy are those of the American bison including 6 individuals, Rocky Mountain goats (4 individuals), great blue heron (8 individuals), and whistling swan (5 individuals).

Historical Sketch. The Buffalo Society of Natural Sciences was organized in 1861 and incorporated in 1863. During the custodianship of Charles Linden the Society began in 1867 the educational work which has since been one of its controlling purposes. Since 1879 it has sent traveling collections of scientific exhibits to the schools of Buffalo and has given free lectures to school children and their teachers. Since 1905 this work has become an integral and compulsory part of the public school system of Buffalo, all the grammar school children coming by schedule to the society's rooms for their nature study, physiology, etc.

Financial Support. The society is in large part dependent for financial support on its membership dues, which are $5 per annum. It has the income from a very modest permanent endowment and receives a regular appropriation of $1000 a year from the city of Buffalo in partial recognition of its school service.

Building. The society occupies two floors of the public library building. It owns a desirable building site adjoining Delaware Park on which it is hoped to erect a new building.

Administration. By a superintendent, responsible to a board of managers consisting of the officers and twelve managers elected by the society.

Scope. The primary objects of the society are the encouragement of original research, the maintenance of local collections, public school work, and instruction of the general public. On Friday evenings from November to May the society gives free public lectures, usually illustrated, on popular scientific subjects.

Library. 5300 bound volumes; 2000 unbound. The library is restricted to scientific works and is intended for the use of the public.

Publications. Semi-annual bulletins are published by the society, 9 volumes having been issued at the end of 1909.

Attendance. The museum is open free to the public daily except Sunday from 9 to 5.

CANISIUS COLLEGE. Museum.

Staff. Curator, Henry Wolff.

Anthropology. 50 Dakota Indian relics and 300 old English curiosities.

Botany. An American herbarium of 800 sheets; a European herbarium of 100 flowering plants and 500 fungi; and a collection of 200 seeds.

GEOLOGY. 800 minerals, especially calcite and silicates; a Ward series of 250 rocks; and 300 local rocks.

PALEONTOLOGY. 300 New York fossils; 300 cretaceous fossils from Maastricht, Holland; 75 fossils from the Bad Lands, South Dakota; and 50 specimens of petrified wood.

ZOÖLOGY. 2500 insects, especially coleoptera and hymenoptera; 100 reptiles, including some rare specimens from India; 300 birds from United States, Austria, and Denmark; and 50 North American and European mammals.

OTHER COLLECTIONS. 3630 Greek, Roman, and medieval coins; 300 books from 250 to 400 years old, including 50 early bibles.

STATE NORMAL SCHOOL.

Small teaching collections in natural science. The specimens of most importance are a number of fossil crustaceans, especially *Eurypterus* and *Endarchus* from neighboring localities.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 11 acres, established in 1894, containing 57 reptiles, 117 birds, and 166 mammals.

CANANDAIGUA:

ONTARIO COUNTY HISTORICAL SOCIETY.

The society has a collection of about 800 articles relating to the history of Ontario County, and a library of 50 volumes, with manuscripts, papers, etc., relating to the early history of western New York.

CANTON:

ST. LAWRENCE UNIVERSITY. Museum.

STAFF. Curator, George H. Chadwick; Assistant, Arthur Head; Student assistant, Arthur Laidlaw; 1 janitor.

BOTANY. Cryptogams, 50; Phanerogams, 150. A seed dispersal series is in process of formation.

GEOLOGY. Minerals, on exhibition, 500±, in storage, 700±; Rocks, on exhibition, 200±, in storage, 100±; Phenomenal geology, etc., on exhibition, 75, in storage, 50; Economic collections, on exhibition, 300±, in storage, 100±; Stratigraphic collections, on exhibition, 100±, in storage, 25. The mineral collection is especially rich in material from northern New York.

PALEONTOLOGY. Invertebrates, on exhibition, 650±, in storage, 150±; Vertebrates, on exhibition, 25, in storage, 10; Plants, on exhibition, 60, in storage, 25. This material is chiefly from New York state.

ZOÖLOGY. 248 specimens on exhibition and 360 in storage.

HISTORICAL SKETCH. The museum was organized in 1906, though much of the material had been acquired during preceding years.

FINANCIAL SUPPORT. From the general fund of the university.

BUILDING. The museum occupies 1400 square feet of floor space for exhibition, and 500 for offices, etc. in the Carnegie Science Hall erected in 1906 at a cost of $60,000.

ADMINISTRATION. By a curator, responsible to the president of the university.

SCOPE. College teaching and the maintenance of local collections.

LIBRARY. A small collection of reference books for the use of students.

ATTENDANCE. Open free to students and visitors during the college session, and at all times on application to the janitor.

In addition to the above there is a small anthropological collection in the department of history, and an art collection under a sepaate department.

CLINTON:

HAMILTON COLLEGE.

The college maintains collections primarily for teaching purposes in Knox Hall in charge of W. G. Miller. The museum includes a considerable collection of Indian implements and relics, especially arrowheads, from the United States; the Dr. H. P. Sartwell herbarium; and a geological collection including 10,000 minerals and ores, and 5000 rocks and fossils. The Oren Root collection of New York state minerals is of special interest, being probably the best collection of its kind except that of the State Museum. There is also the John D. Conley collection of fossils and minerals. In zoölogy there is the Henry Loomis collection of about 10,000 shells, the Barlow and Arnold collections of insects, and the Barlow and Dorrance collections of local birds.

CORTLAND:

CORTLAND SCIENCE CLUB.

The Cortland Science Club was formed by F. W. Higgins in 1899 and incorporated in 1902 for the purpose of acquiring and maintaining a museum and library and promoting the study of natural science.

Its collection is in charge of F. E. Whitmore, curator, and is housed in the Hatch Library building. The collections include 500 birds and 300 bird eggs, 54 mammals, 70 fishes, 1 case of shells, 80 other invertebrates; a small collection of rocks and minerals; Indian relics; and war relics and other articles of historical interest.

ELMIRA:

ARNOT ART GALLERY.

The will of Matthias H. Arnot provides for the organization of a corporation with the name Arnot Art Gallery for the purpose of maintaining his residence and art collections as a public art gallery and reference library. The will provides the sum of $10,000 to be used in remodeling the building for its new use, and also an endowment of $200,000. Mr. Arnot's collection of paintings is valued at about $300,000 and is the principal part of his gift to the public. As the will has but recently been admitted to probate the organization of the institution is as yet incomplete.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 16 acres, established in 1894, containing 22 mammals.

GENESEO:

LIVINGSTON COUNTY HISTORICAL SOCIETY.

This society maintains a small collection of local historical articles, including wearing apparel, furniture, agricultural implements, portraits, manuscripts, etc. There is also a mastodon skeleton and a collection of minerals.

GENEVA:

HOBART COLLEGE.

The college maintains museum collections in connection with the department of biology and in charge of E. H. Eaton, professor of biology. The museum includes several thousand fossils, mostly from local paleozoic strata; several hundred casts of famous and representative fossils from all parts of the world; 1400 mounted or alcoholic local vertebrates; skulls, skeletons, and anatomical preparations; several hundred microscopic slides; a collection of North American bird eggs and nests; a collection of stone implements from Europe and North America; a herbarium of 12,000 specimens; and a collection of rocks and ores. It is the aim of the museum to gather material for the exhaustive illustration of the courses of study and to form a complete collection of the local fauna. Although intended primarily for instruction the museum is open free to the public.

GLEN IRIS:

GENESEE VALLEY MUSEUM. (Letchworth Park.)

This museum is on the Council House Grounds at Glen Iris in Letchworth Park, which comprises 1000 acres donated in 1907 by Wm. Pryor Letchworth to the State of New York. The museum building is a fireproof structure 25 x 37 feet, erected by Mr. Letchworth in 1898 at a cost of $5000, and is maintained at his expense. During the life of the donor, charge of the property remains in his hands, but at his death passes into the custody and control of the American Scenic and Historic Preservation Society.

The museum collections were made for Mr. Letchworth by Mr. Henry R. Howland, of Buffalo, N. Y., and comprise 7000–8000 exhibits including the largest and best collection extant of artifacts from the two sites of Totiacton, one of the five great Seneca castles destroyed by De Nonville in 1687. This material is especially noteworthy for its bearing upon the history and life of the Iroquois, and especially of the Seneca Indians. Near the museum is the council house of the Senecas at Caneadea, which was removed by Mr. Letchworth in 1871 from the original site to Letchworth Park in order that it might be permanently preserved. The museum and grounds are open free to the public daily except Sunday.

GRANVILLE:

PEMBER LIBRARY AND MUSEUM.

The museum contains about 2000 birds, including a pair of most North American species, and many foreign specimens. There is also a collection of bird eggs said to be one of the largest in the state, many mammals and mounted heads, and collections of shells, North American ferns, etc. The museum occupies about 3150 square feet of floor space on the second floor of the library and museum building, erected by Mr. and Mrs. F. T. Pember in 1908 at a cost of $30,000. The collection was gathered during the past 45 years by Mr. Pember and was given by him to the town, together with the cases. It is under the control of the library trustees, of which Mr. Pember is president. He also supports the museum and acts as curator. The library is open every week-day and evening and the museum two days a week. Although the population of Granville is but 4000 the attendance at the museum amounts to from 75–125 daily.

HAMILTON:

COLGATE UNIVERSITY.

The assistant librarian reports that the university maintains a museum, but no further information has been received from repeated requests. It is learned indirectly that the museum is housed in Lathrop Hall and comprises the Urban collection of about 2000 minerals; a collection of western ores and other economic specimens; a good collection of fossils, especially rich in material from the type locality of the Hamilton group on the college grounds; the Bickmore collection of East Indian birds; and a general collection of invertebrates. In addition to these there is the Douglas herbarium of 1600 plants from northeastern United States, and the Cobb collection of 1100 specimens of mosses, lichens, and ferns.

ITHACA:

CORNELL UNIVERSITY. Museum of Classical Archaeology. (Goldwin Smith Hall.)

Staff. Curator, Eugene P. Andrews.

Collections. Over 500 plaster casts, from original moulds, of the best and most typical works of Greek and Roman art extant; 15 examples of Greek pottery; 135 Greek coins, for the most part silver; over 300 paper impressions of Greek inscriptions; the British Museum set of 7 frames of electrotypes of Greek coins; and the most important of the galvan-plastische replicas of Mycenæan antiquities.

Historical Sketch. The casts are for the most part the gift of the late Henry W. Sage, in 1894, and represent an expenditure of about $20,000.

Financial Support. An annual appropriation of about $800 from the university.

Building. The museum occupies about half of the first floor in Goldwin Smith Hall, affording approximately 9000 square feet of exhibition space.

Scope. It is the aim of the museum to provide material for university lectures and to promote general culture.

Publications. A catalog of the collections.

Attendance. Open free to the public on week-days from 9 to 12 and 2 to 5. The number of visitors is about 10,000 a year.

CORNELL UNIVERSITY. Department of Botany. (Sage College.)

In addition to a small teaching collection this department maintains a greenhouse consisting of six rooms with different temperatures, in which an extensive collection of tropical and subtropical plants are kept for class use, investigation, and exhibition. This greenhouse is in charge of the head of the department, Professor G. F. Atkinson, and is open free to the public on week-days, except holidays, from 8 to 5.

CORNELL UNIVERSITY. College of Civil Engineering.

This department of the university maintains teaching collections in charge of the director of the college, Professor E. E. Haskell, and comprising various series of models; details of construction; photographs, blueprints, and diagrams; and an extensive collection of instruments of precision. This museum occupies a floor space of about 4000 square feet.

CORNELL UNIVERSITY. Geological Museum. (McGraw Hall.)

STAFF. Director, Henry S. Williams; Curators, A. C. Gill (mineralogy and petrography), Heinrich Ries (economic geology), R. S. Tarr (physical geography), G. D. Harris and Henry S. Williams (paleontology and stratigraphy).

ECONOMIC GEOLOGY. A collection of ores and rocks, comprising approximately 5000 specimens.

MINERALOGY AND PETROGRAPHY. A good working collection of minerals and rocks, including the Silliman collection of minerals and numerous additions.

PALEONTOLOGY AND STRATIGRAPHY. The Jewett collection of New York paleozoic fossils, the Hart collection from the tertiary, a large collection of devonian material, and many other minor collections, with a small collection of vertebrates. For comparison with fossil series, the Newcomb collection of 10,000 recent shells is also contained in this department.

PHYSICAL GEOGRAPHY. A large series of models, charts, maps, and other illustrative material for purposes of instruction and research. There is also a small department library.

FINANCIAL SUPPORT. The museum has no endowment and is dependent upon the university funds for maintenance and enlargement.

BUILDING. The museum occupies exhibition rooms in the department of geology in McGraw Hall; the study collections, which comprise the greater part of the material, being arranged in the laboratories.

The total amount of floor space occupied by the department is approximately 12,000 square feet.

SCOPE. Maintained primarily for university instruction and research.

ATTENDANCE. The exhibition rooms are open free to the public on week-days.

CORNELL UNIVERSITY. Museum of Invertebrate Zoölogy.

STAFF. This museum is in charge of the staff of the department of entomology and general invertebrate zoölogy as follows: Professor, John Henry Comstock; Assistant professors, A. D. MacGillivray (entomology and invertebrate zoölogy), W. A. Riley (entomology), J. G. Needham (limnology and general biology), G. W. Herrick (economic entomology), C. R. Crosby (entomological investigations).

COLLECTIONS. A synoptic series of about 1000 specimens of invertebrates, the complete series of glass models of invertebrates made by Blaschka, and the papier-maché models of Auzoux. The insect collections have been extensively developed as an adjunct to the work of instruction, and are especially rich in biological and illustrative material. In addition to many exotic species, they contain specimens of a large part of the more common species of the United States. These have been determined by specialists, and are accessible for comparison. It is estimated that the insect collection comprises 115,000 specimens.

FINANCIAL SUPPORT. The museum has no separate funds and is dependent for maintenance and increase upon the general appropriation for the department.

BUILDING. The exhibition collections of the museum occupy 1250 square feet of floor space in the main building of the College of Agriculture; the extensive study collections, however, are contained in cabinets in the laboratories.

SCOPE. Maintained primarily for university instruction and research. The study collections are accessible to students.

ATTENDANCE. The exhibition collections are open free to the public on week-days.

CORNELL UNIVERSITY. Museum of Vertebrate Zoölogy. (McGraw Hall.)

STAFF. The museum has no special staff; the head of the department of neurology and vertebrate zoölogy, Dr. Burt G. Wilder, acts as curator, with the assistance of other members of the staff of instruction, as occasion may require.

Collections. The total number of specimens is nearly 17,000, of which about one-half are in storerooms or laboratories, not commonly open to the public, but accessible for study. Special care has been taken in the selection of a synoptic series of vertebrates. There are also faunal series, in which North American vertebrates are represented by all the ganoids and cyclostomes, one-seventh of the teleosts, two-fifths of the selachians, two-thirds of the frogs and toads, one-third of the lizards, one-half of the salamanders, turtles, and serpents, two-fifths of the birds, and 70 of the mammals. The local fauna is represented by 65 fishes, 17 amphibians, 20 reptiles, 258 birds, and 39 mammals. As an aid to zoölogical instruction there are extensive series of embryos, dissected and injected viscera, and a series of about 1900 well-prepared brains of representative forms, distributed as follows: human adults and children, 500; human embryos and children at birth, 315; apes, monkeys, and lemurs, 235; domestic cats, 265; other mammals, 25; sharks and rays, 105; other vertebrates, 230. This collection includes many rare selachian and holocephalous genera; the human adult brains include 12 from more or less well-known educated persons of both sexes.

Financial Support. The museum has no special funds but is supported from the general appropriation for the department. The amount expended upon the museum proper is about $250 annually.

Building. The portion of the museum which is open to the public occupies about 5575 square feet of floor space in McGraw Hall. The storage collections are kept in the laboratories and storerooms of the department.

Scope. Primarily college teaching and research.

Attendance. The exhibition collections are open free to the public on week-days from 9 to 5. No statistics of attendance are available.

CORNELL UNIVERSITY. Veterinary College.

The college maintains, for purposes of instruction, a collection of about 3000 pathological specimens and several hundred physiological, pharmaceutical, and anatomical preparations. A part of these collections occupies 2500 square feet of floor space in the middle section of the college building, and is open to the public from 9 to 5, although the specimens are not labeled for public exhibition. These collections are in charge of the several professors and are supported from the general funds of the college, derived from appropriations of the state legislature.

JAMESTOWN:

JAMES PRENDERGAST FREE LIBRARY ASSOCIATION. Art Gallery.

By provision of the will of Mary Norton Prendergast, the sum of $25,000 was, in 1889, bequeathed to the association to be expended for "oil paintings—works of art," to be placed in the art gallery in the library building. In addition to the pictures thus purchased the family portraits and other paintings from the Prendergast home have a place in the gallery.

JOHNSTOWN:

JOHNSTOWN HISTORICAL SOCIETY.

In addition to a small library of local history, the society maintains a museum in the Sir William Johnson mansion. The collections are in charge of a caretaker, and are open free to the public on weekdays from 1 to 4.

LAKE GEORGE:

NEW YORK STATE HISTORICAL SOCIETY.

The society reports that it holds valuable collections, but does not maintain a museum.

NEW BRIGHTON:

STATEN ISLAND ASSOCIATION OF ARTS AND SCIENCES. Public Museum.

STAFF. Curator-in-chief, Charles Louis Pollard; Honorary curators, William T. Davis (zoölogy), Philip Dowell (botany), Arthur Hollick (geology and paleontology), John Q. Adams (art); Honorary assistants, James Chapin (zoölogy), Alanson B. Skinner (anthropology); Assistant, Agnes L. Pollard.

ANTHROPOLOGY. Archeology, native, 15,000±; Ethnology, native, 500±. This department includes one of the most complete collections in existence of Staten Island Indian relics; also the Skinner collection of Iroquois Indian ethnology.

ART. The art exhibits consist almost entirely of loan collections, changed from time to time.

BOTANY. A herbarium of 7372 mounted and 2000± unmounted specimens. The department includes a good collection of seeds and fruits of Staten Island and photographs of Staten Island trees.

GEOGRAPHY. Copies of practically all maps of Staten Island published since 1825; photographs of the originals of earlier maps; many United States geological survey charts.

GEOLOGY. Minerals, on exhibition, 150, in storage, 2500±; Rocks, on exhibition, 300, in storage, 2000±; Relief maps, models, etc., 20. This department includes a very complete series illustrating the petrography and stratigraphy of Staten Island; also the Sanderson Smith and the F. Hollick collections of minerals.

HISTORY. Many old documents, books, relics, coins, etc., relating to the early history of Staten Island and vicinity.

PALEONTOLOGY. Invertebrates, on exhibition, 100, in storage, 250; Plants, on exhibition, 50, in storage, 400, types and figured specimens, 14.

ZOÖLOGY. Shells, on exhibition, 260, in storage, 2200±; Insects, on exhibition, 750, in storage, 3500±; Other invertebrates, on exhibition, 40, in storage, 175; Fishes, 5; Batrachians, on exhibition, 24, in storage, 110; Reptiles, on exhibition, 50, in storage, 300; Birds, on exhibition, 346, in storage, 50; Mammals, on exhibition, 5, in storage, 11. There are also exhibition series illustrating variation, mimicry, etc., and insect architecture, marine life, and special characteristics of bird eggs.

HISTORICAL SKETCH. The Staten Island Association of Arts and Sciences was incorporated in 1905 as the successor of the Natural Science Association of Staten Island. The charter authorized the city of New York to furnish quarters and to make an annual appropriation for maintenance not exceeding $10,000. In 1907 the large library room in Borough Hall was assigned to the association for museum purposes and the following year $4000 was appropriated for equipment. The museum was opened to the public May 23, 1908, the association providing the means for carrying on the work during the remainder of that year.

FINANCIAL SUPPORT. The museum receives an optional appropriation from New York City which amounted in 1909 to $4000. This sum was devoted to the salaries of officials. About $900 is received annually from memberships and about $50 from sale of publications. Life membership dues of $50 are applied to a permanent fund; active membership dues at $3 a year are expended for publication of the Proceedings, subscriptions to periodicals, purchase of books, and general administrative expenses.

BUILDING. The city gives free use of a room on the third floor of the borough building with light, heat, and janitor service.

ADMINISTRATION. By a curator-in-chief, responsible to a board of trustees which is represented by a museum committee in immediate charge of the museum.

Scope. The maintenance of local collections, public school work, and instruction of the general public, supplemented by exploration and research by the staff. Loan exhibits are maintained from time to time in the Staten Island branches of the New York Public Library.

Library. A scientific library of 1000 volumes and 2000 pamphlets is maintained for the use of both staff and public.

Publications. (1) Proceedings of the Natural Science Association of Staten Island; this series is complete in 9 volumes issued from 1883 to 1905. (2) Proceedings of the Staten Island Association of Arts and Sciences, 2 parts issued annually, 4 parts making a volume; volume I was completed in May, 1907.

Attendance. Open to members at all times and open free to the public from 10 to 5 on Saturdays, and from 1 to 5 on Tuesdays, Wednesdays, Thursdays, and Fridays. The total attendance for the first six months was 1512; for the succeeding five months, 1876.

NEW YORK CITY:

ACADEMY MT. ST. VINCENT.

This academy has a museum which includes the Arnold collection of about 1000 minerals, somewhat increased by subsequent additions; the Benjamin F. Joslin collection of minerals and shells; the John Gilmary Shea collection of about 400 coins; the John Fox collection of corals; etc.

AMERICAN MUSEUM OF NATURAL HISTORY.

Staff. Director, Hermon C. Bumpus; Curator emeritus, Albert S. Bickmore (public education); Honorary curators, George F. Kunz (gems), William M. Wheeler (social insects), Alexander Petrunkevitch (arachnida), Aaron L. Treadwell (annulata); Curators, E. O. Hovey (geology and invertebrate paleontology), L. P. Gratacap (mineralogy and mollusca), Henry E. Crampton (invertebrate zoölogy), J. A. Allen (mammalogy and ornithology), Frank M. Chapman (ornithology), Henry F. Osborn (vertebrate paleontology), Clark Wissler (anthropology), Ralph W. Tower (physiology; books and publications), Charles E. A. Winslow (public health), George H. Sherwood (public education); Associate curators, W. D. Matthew (vertebrate paleontology), Pliny E. Goddard and Harlan I. Smith (anthropology), William Beutenmüller (lepidoptera); Assistant curators, Roy W. Miner and Frank E. Lutz (invertebrate zoölogy), Louis Hussakof (fossil fishes), Walter Granger (fossil mammals), Barnum Brown (fossil reptiles), R. H. Lowie and H. J. Spinden (anthropology); Assistants, Roy C. Andrews (mammalogy), W. deW. Miller (ornithology), Charles W. Mead and Alanson Skinner (anthropology), Mary C. Dickerson (in charge of woods and forestry), Anthony Woodward (in charge of maps and charts); Preparators and technical employees, 37; Administrative and clerical employees, 42; Engineers and mechanical employees, 28; Custody of building, employees, 72.

ANTHROPOLOGY. Uncivilized peoples: Archeology, native, 94,000, foreign, 15,000; Ethnology, native, 31,000, foreign, 108,500. There are 12 life-size ethnological groups on exhibition.

GEOLOGY. Minerals, on exhibition, 13,000, in storage, 5000; Rocks, on exhibition, 1500, in storage, 10,000; Relief maps, 23. Other collections include 1450 gems on exhibition and 1550 in storage, 580 meteorites, and 1050 building stones. Material of special interest includes collections from Mt. Pelé; the Willamette meteorite; and "Ahnighito," the Cape York meteorite. The last weighs 36.5 tons and is the largest and heaviest meteorite known.

PALEONTOLOGY. Invertebrates, on exhibition, 236,000, in storage, 8300, types and figured specimens, 8500; Vertebrates, on exhibition, 2000±, in storage, 18,000, types and figured specimens, 1000; Plants, on exhibition, 1500, in storage, 1000. Material of special interest on exhibition includes 49 complete mounted skeletons of mammals and 24 of reptiles and amphibians. There are also important series illustrating the evolution of the horse, and extensive series of dinosaurs.

ZOÖLOGY. Shells, on exhibition, 65,000±, in storage, 185,000, types and figured specimens, 140; Insects, extensive collections with numerous types and figured specimens; Fishes, batrachians, and reptiles, small collections; Birds and mammals, extensive collections. There are special economic exhibits of insects; local and seasonal exhibits of birds; and enlarged models and life-size groups of invertebrates. There are 56 large and 108 small groups of animals exhibited in natural surroundings; among these special mention may be made of the habitat groups of birds.

OTHER DEPARTMENTS. The department of public education maintains a children's room, an exhibit for the blind, and loan collections of nature study material. During the school year 463 cabinets have been sent to 384 schools, containing over a million children.

The departments of physiology and public health are at present incomplete. The department of woods and forestry has on exhibition 505 specimens and in storage, 2587.

HISTORICAL SKETCH. This museum was founded in 1869 and was first housed in the arsenal in Central Park. The cornerstone of its present building in Manhattan Square was laid in 1874.

FINANCIAL SUPPORT. Income from endowment, $108,000; city appropriation, $185,000; subscriptions, memberships, etc., $25,000±. There are also special funds. By agreement, the city erects the buildings and provides for the maintenance of the museum, the collections being provided by the museum corporation.

BUILDING. Erected by the city in 1874–1908 at a cost of $4,838,000. The number of square feet of floor space available for exhibition is 262,336; for offices, workrooms, etc., 176,523.

ADMINISTRATION. By a board of trustees, and a director, who acts as executive officer.

SCOPE. Instruction of the general public, exploration, research, and public school work are the chief activities of the museum.

LIBRARY. About 40,000 books and 20,000 pamphlets, intended for the use of both staff and public.

PUBLICATIONS. (1) Annual Report. (2) Bulletin, 1 volume issued annually. (3) Memoirs, issued irregularly. (4) Anthropological papers, a part of the Bulletin devoted exclusively to anthropology and issued at irregular intervals. (5) Ethnographical Album. (6) Museum Journal, a popular record of museum work issued monthly from October to May. (7) Guide Leaflets, issued at irregular intervals.

ATTENDANCE. Open free to the public on week-days from 9 to 5 and on Sundays from 1 to 5. The attendance in 1909 was 839,141.

AMERICAN NUMISMATIC SOCIETY. (156th Street west of Broadway.)

This society was organized in 1858 and is the second oldest society of its kind in America. It maintains a large collection of coins and medals and a large numismatic library which are open free to the public daily from 10 to 5. The society also publishes the American Journal of Numismatics. The museum staff consists of Bauman L. Belden, director, and Agnes Baldwin, curator. The society owns its building.

COLLEGE OF THE CITY OF NEW YORK.

The college has more or less extensive collections in various departments but has no organized museum. In addition to material purchased by the college there are a number of special gift collections containing valuable material. The department of chemistry has a museum illustrating the manufacture of substances from raw material. The department of history maintains a collection of articles of historical interest in connection with the history of New York. The department of natural history maintains an extensive museum, of which the nucleus was given by Dr. Bashford Dean; there is also a large series of mineralogical specimens.

COLONIAL DAMES OF AMERICA.

This society, organized in 1890, is said by Thwaites to maintain museum and art collections.

COLUMBIA UNIVERSITY.

Botany. The collections of this department are united with those of the New York Botanical Garden in Bronx Park, with the exception of a small teaching collection in Schermerhorn Hall.

Chemistry. The Chandler museum of applied chemistry contains illustrations of the chemical and physical history of electricity, photography, glass, pottery, etc.

Geology and Paleontology. This collection is housed in Schermerhorn Hall, and consists chiefly of the collections gathered by the late Professor J. S. Newberry. It is especially rich in fossil fishes (now on deposit in the American Museum of Natural History), of which it contains many types; there is also an unusually fine specimen of the Irish elk. The extensive collections of fossil plants formerly in this museum are now deposited with the New York Botanical Garden.

Zoölogy. An excellent teaching collection, covering osteology embryology, cytology, invertebrate zoölogy, etc.

COLUMBIA UNIVERSITY. Egleston Mineralogical Museum.

This collection is housed in Schermerhorn Hall and is in charge of Alfred J. Moses. It was formed in 1864 as a working collection for the School of Mines. In 1880 it had grown to 13,000 specimens, in 1890 to 19,000, and in 1900 to approximately 30,000, all carefully selected specimens. In addition to the exhibition series, which are well installed and completely cataloged, there are extensive study collections for the use of students. There is a working library of about 1000 volumes on mineralogy and crystallography, intended for the use of the staff and students.

COLUMBIA UNIVERSITY—TEACHERS COLLEGE. Educational Museum.

Staff. Curator, David Eugene Smith; Assistant, Sarah Mitchell Neilson.

Collections. These include an exhibit of school materials and work, together with a large loan collection of material illustrating the historical development of mathematics. The special material owned by the museum relates to the teaching of classics, history, and art. There is a loan collection of material used in teaching in the various grades of the public schools, and a collection of about 2000 current text books for elementary and secondary schools, exhibited in the college library. It also possesses for circulation in the college and its schools, over 8000 photographs and pictures, and over 10,000 lantern slides, together with a number of special collections in household arts, history of education, and other branches. There is a collection of the work of pupils, preserved in scrap books for future reference. The scrap book collection also includes illustrations of the best known schools in different parts of the world.

Historical Sketch. The museum had its origin in the Children's Industrial Exposition, held in 1886. From 1886 to 1899 a museum room was maintained at 9 University Place. In 1899 the first curator was appointed and systematic museum work commenced.

Scope. The museum serves three main functions: (1) As a repository of exhibits showing the work of various departments. (2) As an agency to collect and circulate illustrative material for the use of the college and its schools. (3) As a place for temporary exhibits of an educational nature, about 6 of these being held during the academic year.

Financial Support. From the general budget of the college.

Attendance. Open free to the public daily, except Saturdays, from 9 to 5. Saturdays from 9 to 12 excepting from the close of the summer session to the opening of the academic year.

COOPER UNION. Museum for the Arts of Decoration.

Staff. Directors, Mrs. Abram S. Hewitt, Mrs. J. O. Green, Sarah Cooper Hewitt, Eleanor G. Hewitt; 4 custodians.

Art. The collections include only such articles as are decorative in their nature, and these are arranged to show the historical development of ornament as applied to the various artistic trades. The arrangement is chronological in centuries, with alphabetical sub-divisions into countries and further alphabetical sub-divisions into artists, cities, etc. The objects exhibited include sculpture, prints and engravings, oil paintings of various periods, water colors, ceramics, a very fine collection of textiles of various countries from the 4th century to modern times, metal work, bronzes, furniture, casts of interior and exterior decorative work, book bindings, enamels, numismatics, jewelry, costumes and accessories, prints of plants, trees, and flowers.

Historical Sketch. The nucleus of this museum was formed by a large collection of casts of the best French architectural and interior decorative motives, presented by Mr. and Mrs. Abram S. Hewitt and their daughters in 1889. The museum was formally opened in May, 1896.

Financial Support. The Cooper Union provides the room, heat, light, and the salaries of the custodians, but the collections are increased by the purchases of the museum directors themselves or by donations of interested friends.

Building. The museum occupies one floor of the Cooper Union.

Administration. By a board of directors consisting of four ladies who are responsible to the trustees of the Cooper Union.

Scope. The collections are intended primarily for the use of the Cooper Union classes but are accessible to everybody. Several private schools have sent their classes to work in the museum; furniture makers have already reproduced many of the pieces at considerable profit, and thus have extended the taste for the best models of different countries; and decorators have employed Cooper Union students to sketch interiors and furnishings in the museum for exhibition to their clients.

Library. A reference library on art subjects and 800 encyclopædic scrap books are accessible to the public and the students.

Attendance. The museum is open free to the public, day and night, on 201 working days during the year, with the provision that each visitor inscribe his name, address, and profession in the admission book. In the year 1908–9, the total number of visitors, students, and workers, was 6627.

HISPANIC SOCIETY OF AMERICA. (156th Street west of Broadway.)

The museum of the society comprises a small number of paintings; wood-carving; silver-work; ironwork; ivory plaques and combs of Phenician origin; neolithic and Roman pottery; objects of domestic use from the Roman Italica; ejecutorias or patents of nobility; a collection of Hispano-Moresque plaques; examples of Buen Retiro ware; azulejos, or glazed tiles; Roman mosaics; some 160 Spanish incunabula, beginning with a large collection of the first printer in Spain, Lambert Palmart of Valencia; a few incunabula of printers in Italy and Germany, of interest for comparison or on other grounds; autograph letters of Charles V and of the Duke of Wellington; a few Latin and Hebrew manuscripts; manuscripts of George Borrow and of Robert Southey; first editions of the important Spanish authors; a general Spanish numismatic collection; drawings by Vierge illustrative of Don Quijote; copies of Velázquez; ecclesiastical embroideries; ancient maps; portolans; prints and facsimilies.

These collections are installed in the galleries of the society's building, where they are open free to the public daily, except in the month of August and on Christmas and Thanksgiving, from 1 to 5. The Hispanic Society was founded in 1904 by Mr. Archer M. Huntington, who has also given the building and collections. The society has also a very valuable library and issues various publications.

METROPOLITAN MUSEUM OF ART.

STAFF. Director, Sir Caspar Purdon Clarke; Assistant director, Edward Robinson; Assistant secretary, Henry W. Kent; Curator emeritus, George H. Story; Curators, Bryson Burroughs (paintings), Edward Robinson (classical art), Wilhelm R. Valentiner (decorative arts), Bashford Dean (arms and armor), John H. Buck (metal work); Assistant curators, A. B. de St. M. D'Hervilly (paintings), Garrett Chatfield Pier and Joseph H. Breck (decorative arts), Charles R. Gillett (Egyptian department and Cesnola collection); Assistants, Gisela M. A. Richter (classical art), Frances Morris (in charge of textiles and musical instruments), Ethel A. Pennell (in charge of photographs), Clarence L. Hoblitzelle, Jr. and Florence N. Levy (general assistants); European adviser on paintings, Roger E. Fry; Museum instructor, Marion E. Fenton; Librarian, William Clifford; Assistant librarian, Lucie E. Wallace; Superintendent of building, Conrad Hewitt; Assistant superintendent, Walter F. Williams.

ART. *Antiquities:* Etruscan bronze chariot, 6th century B. C.; Roman bronze statue of Emperor Trebonianus Gallus; Wall-paintings from Boscoreale; Cesnola collection of antiquities from Cyprus; Gold ornaments, inscribed cylinders, gems, etc. *Oriental Art:* Collection of Chinese porcelains lent by Mr. J. Pierpont Morgan; Heber R. Bishop collection of jades, etc.; Japanese arms and armor; E. C. Moore collection of oriental art. *Western Art:* Selected paintings; the Hoentschel collection of French Gothic art lent by Mr. J. Pierpont Morgan; the Hoentschel collection of French 18th century art given by Mr. Morgan; Dino and Ellis collections of arms and armor; Mrs. S. P. Avery collection of spoons; Moses Lazarus collection of fans; Burgundian Gothic tapestries; Crosby-Brown collection of musical instruments; Woodwork and furniture.

Historical Sketch. The movement which resulted in the establishment of the museum was initiated by the Union League Club in 1869. The institution was incorporated in April 1870, and the nucleus of the collections was formed by the purchase of three collections of old masters in 1871 and of the Cesnola collections of Cypriote antiquities, 1872–6. Prior to 1880 the museum occupied rented quarters, first on Fifth Avenue and then on Fourteenth Street, and the present building was opened to the public in 1880.

Financial Support. The museum has the following sources of income: endowment; city appropriation, optional within fixed limits, in 1909, $200,000; memberships, $45,860; admission fees, $11,622.50; sale of publications, $8,759.93. The administration expenses for 1909 exceeded $285,000.

Building. Erected in 1874, and opened to the public in 1880. It has since grown to about seven times its original size and still further additions are in progress. All additions have been constructed and equipped by the city, whose property they are.

Administration. By a board of trustees.

Library. 15,000 volumes on the fine arts and archeology, housed in a separate library building, and used by the public as well as by the staff. There are large supplementary collections of photographs.

Publications. These include annual reports (1871 to date), photographs, circulars of information, catalogs, and a monthly Bulletin.

Attendance. Open to the public daily, from 10 to 6 in summer and 5 in winter (on Saturdays from 10 to 10 and Sundays 1 to 6). Admission is free except on Mondays and Fridays when an entrance fee of 25 cents is charged to all except members, copyists, and teachers with classes.

NEW YORK BOTANICAL GARDEN. (Bronx Park.)

Staff. Director-in-chief, N. L. Britton; Assistant director, W. A. Murrill; Head curator, John K. Small; Curators, P. A. Rydberg, Arthur Hollick, Marshall A. Howe, H. H. Rusby (economic collections); Museum custodian, Arthur J. Corbett; Head gardener, George V. Nash; Director of the laboratories, Fred J. Seaver; Librarian, John H. Barnhart; Consulting chemist, W. J. Gies; Superintendent, F. A. Schilling; Landscape engineer, John R. Brinley; Clerk and accountant, W. S. Groesbeck; Administrative assistant, Percy Wilson.

Botany. Cryptogams, 500,000±, including several thousand types and figured specimens; Phanerogams, 750,000±, including several thousand types and figured specimens. There is a special local herbarium of 10,000 specimens; an economic and a systematic museum, each containing many thousand specimens; public greenhouses containing 8000 species and races; a systematic herbaceous garden of 2500 species; a fruiticetum of 700 species and races; an arboretum of 520 species and races; an economic garden of 150 species; a morphologic garden of 100 species; and numerous special and decorative plantations.

Many of the herbarium and garden collections are related to commerce and industry; portions of the collections illustrate geographical distribution. There are also within the grounds examples of glaciated rock surfaces, transplanted boulders, river terraces, a post-glacial gorge, exposures of gneissic and schistose rocks, and other features of geologic interest.

Paleontology. Fossil plants, on exhibition, 3700, in storage, 10,300, types and figured specimens, 1000. Nearly all of the specimens in storage are accessible for study purposes.

Financial Support. Income from endowment, $13,500; city appropriations for maintenance, $75,000; memberships, $9500; gifts, in 1908, about $9300; sale of publications, $1400. The city is required by its charter to maintain the garden but the amount of the appropriation is not fixed.

Buildings. The buildings have been erected since 1898 by the city at a cost of about $700,000. There is 40,000 square feet of floor space available for the museum, 25,000 for the laboratories, library, offices, workrooms, etc., and 60,000 for the public conservatories.

Administration. By a board of managers.

Scope. Exploration, research, maintenance of local collections, college and public school teaching, and instruction of the general public.

Library. 21,230 bound volumes and many thousand pamphlets on botany and horticulture, intended primarily for the use of the staff.

Publications. (1) Journal of the New York Botanical Garden, published monthly, 10 volumes issued. (2) Mycologia, published bi-monthly, first volume begun in 1909. (3) Bulletin of the New York Botanical Garden, 6 volumes issued to 1909. (4) North American Flora, planned to be complete in 30 volumes, 12 parts issued to 1909. (5) Memoirs of the New York Botanical Garden, 4 volumes issued. (6) Contributions from the New York Botanical Garden, 4 volumes issued.

Attendance. Open free to the public daily from 10 to 5. No record of attendance kept.

THE NEW YORK HISTORICAL SOCIETY (170 Central Park West.)

This society, founded in 1804, maintains collections comprising 76 pieces of sculpture, a collection of New York prints, and 944 oil paintings. Among special collections may be mentioned the Peter Marié collection of miniatures consisting of portraits of American women, the Bryan gallery of old masters, the collection of the New York Gallery of Fine Arts, the Dürr gallery, the Abbott collection of Egyptian antiquities, and the Lenox collection of Nineveh sculptures.

The society maintains a library of 150,000 volumes on American history and publishes a series of Collections containing material on American history.

NEW YORK PUBLIC LIBRARY. Lenox Branch. (Fifth Avenue and 70th Street.)

The library has two galleries: (1) the Lenox gallery, containing 150 paintings, several marble statues, and other objects of art; (2) the Stuart gallery, containing 242 paintings and one piece of Gobelin tapestry, 13½ × 21½ feet in size. These collections are maintained but not increased by the New York Public Library. There are catalogs of each collection, but no other publications relating to them.

It is expected that this collection will be moved to a new library building at Fifth Avenue and 42nd Street, in 1911.

NEW YORK UNIVERSITY.

No reply has been received to repeated requests for information regarding the museums of the university, which are said by Merrill to comprise ethnological collections, 1500 minerals, 8000 specimens of economic geology, 16,000 fossils, and zoölogical specimens which are especially rich in Bermuda material.

NEW YORK ZOÖLOGICAL SOCIETY. Aquarium. (Battery Park.)

Staff. Director, Charles Haskins Townsend; Assistant director, R. C. Osburn; Assistants, L. B. Spencer (fresh-water collections), W. I. DeMyse (marine collections); 1 clerk and stenographer, 1 foreman, 3 engineers, 3 fire men, 3 filter men, and 15 attendants.

Aquaria. These contain a total of 3000-4000 specimens, including: Fishes, 200± species (fresh-water and marine); Batrachians, 30± species; Reptiles, 40± species; Mammals, 3 to 5 species; a few aquatic insects and numerous marine invertebrates. The laboratory contains many small self-sustaining aquaria.

Fish Hatchery. Maintained as a fish-cultural exhibit and producing yearly from 3 to 8 million young food and game fishes, which are afterwards deposited in New York State waters. Fish eggs are supplied by the United States bureau of fisheries from government hatcheries.

Historical Sketch. The aquarium was opened to the public in 1896, under the control of the park department. On November 1, 1902, its management was transferred from the department of parks to the New York Zoölogical Society.

Financial Support. An annual appropriation of $45,000 from the city, extra appropriations sometimes being made for improvements.

Building. Erected in 1807 by the United States Government as a fort, known as West Battery, and after the war of 1812 as Castle Clinton; in 1822, ceded by Congress to the city of New York, and used as a place of amusement called Castle Garden. Many events of historical interest occurred here. From 1855 to 1891, used by the Bureau of Immigration as a landing station for immigrants; opened as an aquarium in 1896.

The building is circular in form, with a diameter of 205 feet, and contains, besides the large exhibition hall, 6 large offices and workrooms. It has 7 large floor pools, the largest being 37 feet in diameter, and 7 feet deep, 94 large wall tanks, and 30 smaller tanks. It is equipped for heating sea water for tropical fishes in winter and has a refrigerating plant for cooling fresh water in summer. The salt-water wall tanks are supplied from a reservoir holding 100,000 gallons of pure stored sea water. This water, brought in by steamer, is used as a "closed circulation," the water being pumped through the exhibition tanks and falling thence, through sand filters, back to the reservoir.

Administration. By a director, responsible to the New York Zoölogical Society through its executive committee.

Scope. Entertainment and instruction of the general public and of the pupils of the city schools. On Monday forenoons it is closed to the public and its facilities placed at the disposal of teachers with their classes. Small aquaria have been placed in 300 schools of the city and teachers are supplied with the surplus zoölogical material. The research laboratory is used by the staff and by university students and professors engaged in marine biological research. A photographic room provides for the making of pictures of aquatic animals.

Library. A working library of about 700 volumes on ichthyology, marine zoölogy, fisheries, and aquatic life in general.

Publications. Annual reports and occasional bulletins, issued as publications of the New York Zoölogical Society. The first volume of a proposed New York Aquarium Nature Series has already appeared under the title of "Sea-Shore Life," Mayer.

Attendance. Open free to the public daily, April–October, from 9 to 5; November–March, 10 to 4; closed on Monday forenoons except to classes, and to members of the society. The attendance in 1909 was 3,803,501, with a daily average of 10,417. The attendance for the past 13 years exceeds 25,500,000.

NEW YORK ZOÖLOGICAL SOCIETY. Zoölogical Park. (Bronx Park.)

Staff. Director and general curator, William T. Hornaday; Chief clerk and disbursing officer, H. R. Mitchell; Curator of reptiles and assistant curator of mammals, Raymond L. Ditmars; Curator of birds, C. William Beebe; Chief forester and constructor, H. W. Merkel; Veterinarian, W. Reid Blair; Civil engineer, George M. Beerbower; Photographer and assistant editor, Elwin R. Sanborn; Assistant to chief clerk, William I. Mitchell. Permanent employees: General administration, 19; Care of animal collections, 29; Maintenance and repairs, 31; Care of grounds, 56.

Collections. Batrachians and reptiles, 1308 specimens, representing 198 species; Birds, 2880 specimens, representing 665 species; Mammals, 812 specimens, representing 254 species.

Historical Sketch. The New York Zoölogical Society was incorporated in 1895 for the purpose of maintaining a public zoölogical park for the preservation of native animals and for the promotion of zoölogy. The final plan for the zoölogical park was approved November 22, 1897, and the society assumed control of the grounds July 1, 1898. The first building was begun August 11, 1898, and the park was formally opened to the public November 9, 1899.

Financial Support. A city appropriation for maintenance of park and collections, amounting in 1910 to $167,632, supplemented by the income of the Zoölogical Society from memberships, amounting in 1909 to $26,753.

Buildings and Grounds. Large animal buildings (all heated), 12; Small animal buildings (4 heated), 14; Large groups of outdoor dens, aviaries, and corrals, 12; Animal storehouses, for winter use, 3; Restaurants, 2; Public-comfort buildings, 6; Entrances, 8; Area of park land and water, 264 acres; Area of water, 30 acres; Walks and roads, 7.78 miles; Fences, 10.55 miles.

Administration. By a director, responsible to the executive committee of the New York Zoölogical Society.

Library. The creation of a library of vertebrate zoölogy for the use of both staff and public was seriously begun in 1910.

Publications. The society issues an annual report, a quarterly bulletin, and Zoölogica at intervals.

Attendance. Open to the pubilc daily from 9 (Nov. 1–May 1, from 10) to a half hour before sunset. On Mondays and Thursdays (except when these are holidays) admissions of 25 and 15 cents are charged. At all other times admission is free. The attendance in 1909 was 1,614,953: from January 1, 1900, to January 1, 1910, there was a total attendance of 10,913,528.

THE PENNSYLVANIA SOCIETY. (218 Fulton Street.)

The society maintains small historical collections which it hopes ultimately to develop into a museum.

NIAGARA:

NIAGARA UNIVERSITY.

The university maintains the following museum collections for teaching purposes: 60 anthropological specimens, 100 numismatic specimens, a herbarium of 300 native plants, 400 minerals, 2000 fossils, and 130 zoölogical specimens.

POUGHKEEPSIE:

VASSAR COLLEGE.

Staff. Curators, A. L. Treadwell (natural history), L. F. Pilcher (art).

Anthropology. 350 specimens of arrowheads, etc. from the United States; the Ermine A. Smith collection of 200 ethnologic specimens of the Zuni Indians; the Orton collection of 120 specimens from South America, including valuable pottery, an ancient Peruvian mummy, and a compressed human head from the Amazon; 100 other archeologic and ethnologic specimens.

Art. Oil paintings, water colors, Arundel prints, and an extensive collection of casts.

Botany. Cryptogams, 2000; Phanerogams, 4500±. The department includes the Merrill collection of 1000 ferns; 100 Hawaiian ferns; a general herbarium of 1500 specimens; and 100 plants, in many cases with open flowers, preserved in alcohol. As an adjunct to the museum the Eleanor conservatory contains about 1500 plants representing the leading families.

Geology. Minerals and rocks, 2572; Dynamic geology, relief maps, models, etc., 50; Microscopic sections of rocks, 100.

Paleontology. Invertebrate, vertebrate, and plant fossils, on exhibition, 1625, in storage, 2100±. This collection includes skeletons of a mastodon and a moa; 100 fine sections of American fossil bryozoa; and 50 species of fossil ostracoid entomostraca.

Zoölogy. Shells, on exhibition, 500±, in storage, 6000; Insects, 500±; Other invertebrates, 300±; Fishes, 40±; Batrachians, 100±; Reptiles, 100±; Birds, on exhibition, 2500±, in storage, 122±; Mammals, 140±. The collection of birds includes the types of *Stercorarius pomerinus* (Audubon specimen), *Icterus graceauræa*, and *Merula hauxwelli*. Especially valuable specimens are the great auk which served as the original of Audubon's plate, a male Labrador duck, and several ivory-billed woodpeckers and Carolina parakeets. These specimens were in the collection of J. J. Giraud, who was a friend of Audubon and obtained some of his specimens from him.

Financial Support. The college grants annually $650 to each of the two divisions of the museum (art and natural history). There is also a fund of $2000 left by J. J. Giraud, the income of which is used for the extension of the collection of North American birds.

Administration. By curators, responsible to a board of trustees through the president of the college.

Scope. The purpose of the museum is college teaching.

ROCHESTER:

ROCHESTER ACADEMY OF SCIENCE.

The academy has botanical and zoölogical collections deposited in the museum of the University of Rochester.

ROCHESTER HISTORICAL SOCIETY.

In addition to a library of several thousand volumes on local American history, the society maintains a collection of Indian relics and other anthropological material; portraits of local celebrities and other prints and paintings of a historical nature. The collection is in charge of W. H. Samson, chairman of library committee, N. S. Olds, curator, and R. T. Webster, assistant curator.

UNIVERSITY OF ROCHESTER. Museums.

STAFF. Curators, H. L. Fairchild (geology and paleontology), Charles Wright Dodge (botany and zoölogy).

ANTHROPOLOGY. A small but well authenticated collection of flint and bronze instruments from the drift region of Abbéville and St. Acheul in France; stone implements from Copenhagen; North American stone implements, including the Lewis H. Morgan collection relating to North American Indians, mound builders, and cliff dwellers; and specimens of pottery from the tombs of the Incas.

BOTANY. A general teaching collection and the following special collections: flowering plants and ferns of Monroe County, New York, and a general collection of ferns deposited by the Rochester Academy of Science; the Huntley collection of New Zealand ferns; several hundred species of the smaller fungi.

GEOLOGY. Minerals, on exhibition, 5000, in storage, 1000±; Rocks, on exhibition, 3000, in storage, 1000±; Economic collections, etc., 2000±. Most of the material in this department is a part of the Ward collections, accumulated during many years of extensive travel and forming one of the best geological museums in the country.

PALEONTOLOGY. There are 25,000± fossils on exhibition and 1000± in storage, including about 8000 European species. The collection is particularly rich in ammonites and tertiary mollusks. There are a large number of Ward casts, and a collection of carboniferous plants made by Professor Fairchild in the Wyoming and Lackawanna coal basin.

ZOÖLOGY. This collection was established in 1890, and includes the Ward collection of South American birds and mammals; the Charles Andrews memorial collection of Monroe County snails; a large collection of mollusks deposited by Charles M. Robinson; a collection of land and water shells of Monroe County, deposited by the Rochester Academy of Science; the Eaton and Wilbur collection of 500 specimens illustrating 175 species of birds of Western New York; a large collection of bird eggs and nests; a collection of butterflies and moths deposited by the Rochester Academy of Science and the valuable Watson collection illustrating protective resemblance and allied phenomena among insects; and the Lewis H. Morgan collection, containing the original specimens used in illustrating his monograph on "The American Beaver and his Works."

Historical Sketch. The greater part of the material in the geological and paleontological collections was accumulated by the late Henry A. Ward and was purchased in 1862 for the university through the generosity of citizens of Rochester, at a cost of $20,000. It includes about 40,000 specimens of the finest quality, mostly foreign, handsomely mounted and labeled.

Financial Support. From the general funds of the university.

Building. The museum of geology and paleontology is located on the second floor of Sibley Hall; the museums of botany and zoölogy are on the third floor of the Eastman laboratories.

Scope. College teaching, supplemented by public school work and instruction of the general public.

WARD'S NATURAL SCIENCE ESTABLISHMENT.

This is a commercial company incorporated under the laws of New York for the purpose of collecting, preparing, and dealing in objects of natural history. This has been the chief supply house for American museums for more than forty-five years.

Staff. President, Frank A. Ward; Treasurer, Edward S. Ward; and an average of 20 employees, including mineralogists, paleontologists, conchologists, osteologists, taxidermists, etc.

Anthropology. 5000± articles of war, utility, ceremony, and adornment of ancient and modern races from all parts of the world, also a large series of aboriginal skulls and skeletons.

Botany. Models illustrating the anatomy of plants.

Geography. A series of relief maps.

Geology. 160,000 minerals from all parts of the world; a large collection of meteorites; 22,000 specimens illustrating general petrology, physical, dynamic, and stratigraphic geology; a special series of 125 specimens from typical localities of the New York formations; relief maps and models of interesting geologic regions of the United States and foreign countries; models illustrating dynamic and structural geology.

Paleontology. 150,000 specimens of all geologic ages from all parts of the world; 1024 casts of celebrated fossils, many of the originals of which are in the royal museums of Europe; 100 different models and charts.

Zoölogy. 137,000 specimens, including mounted specimens and skeletons of the various groups; human skeletons, anatomical models, charts, and diagrams for classroom work; a general collection of 125,000 specimens of zoölogy representing over 5000 species and including corals, crustacea, other invertebrates, birds, and mammals.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of about 4 acres, established in 1902, containing 4 reptiles, 413 birds, and 108 mammals.

SCHENECTADY:

SCHENECTADY COUNTY HISTORICAL SOCIETY.

This society was organized in 1905 and has established a museum which contains at present about 150 articles of historical interest, besides 721 documents, manuscripts, maps, letters, etc.

UNION COLLEGE. Natural History Museum.

STAFF. Curator, James H. Stoller; Honorary curator of the Wheatley collection of minerals, Daniel S. Martin.

ART. There are in the library building a number of original alabaster slabs from Nineveh, including 2 large winged figures.

BOTANY. A herbarium of local ferns and flowering plants, including the J. B. Ellis collection of 2300 fungi; also a considerable number of foreign plants from Germany, Spain, Asia Minor, Switzerland, France, England, Iceland, and Norway.

GEOLOGY. The Wheatley collection of 3000 minerals on exhibition and 1000 in storage; a considerable collection of rocks. The Wheatley collection, presented to the college in 1858, has recently been revised and supplemented by specimens presented by Dr. Martin and by Mr. Alfred H. Brooks. In addition to an excellent general collection it includes fine crystallized charcoal chalcocites from Bristol, Connecticut, an excellent series from the Perkiomen copper mine, and a collection of lead ores, calcites, and crystallized barites from the Wheatley lead mine at Phœnixville, Pennsylvania, probably unequaled in the world.

ZOÖLOGY. The Wheatley collection of 3000 shells, a large collection of marine Annelida made by H. S. Webster, 311 mounted birds, and small collections in other groups.

The museum occupies one floor of the library building, and is supported by a small annual appropriation from the college.

SCHOHARIE:

SCHOHARIE COUNTY HISTORICAL SOCIETY.

This society maintains a miscellaneous loan collection of 1386 specimens, and 3 special collections comprising (1) 326 minerals, crystals, gems, etc.; (2) 1060 implements of the stone age; (3) 57 North American bird eggs—owned and loaned by D. A. Hitchman of Schoharie. These collections are housed in the old stone fort, built in 1772 by the Reformed Protestant High Dutch as a house of worship, and granted to the free use of the society in the year of its organization, 1888. The museum is in charge of the curator, Henry Cady.

SILVER BAY:

PAINE PRIVATE MUSEUM.

This museum comprises a very complete collection of the fauna, flora, geology, and history of the Lake George region. All birds and mammals are exhibited in natural surroundings with nests or burrows, and eggs or young. This department includes over 300 birds, a few fishes, and all the mammals which now inhabit the locality. In history there are about 2000 specimens of firearms, implements, etc. of the old French and Revolutionary wars, and about 1200 portraits of men and women who participated in the events of those times. There are also 4000–5000 prehistoric implements from local sites, and a library of about 600 volumes pertaining to the history of the Lake George and Lake Champlain region. This museum is the property of Mr. Silas H. Paine and is open free to the public on week-days from 8 to 6.

SKANEATELES:

SKANEATELES LIBRARY ASSOCIATION. Barrow Art Gallery.

A collection of 318 oil paintings, the work of the late John D. Barrow, was given to the association, with the building containing the collection, in 1905, and is administered by it for the benefit of the people of the town. The gallery is open free to the public daily from 9 to 9.

The association possesses also natural history collections, including the ferns of Onondaga County, presented by Mrs. Joseph C. Willets, and local geological and paleontological material, collected and presented by the late Ezra B. Knapp, representing a value of about $2000.

SOUTHAMPTON, LONG ISLAND:

SOUTHAMPTON ART MUSEUM.

This museum, though incorporated, is a private collection, which is open free to the public without restriction of any kind. It was established by the owner, Samuel L. Parrish, in 1897, with the intent of embodying and illustrating the spirit of the Italian renaissance and contains about 50 original paintings and 12 copies, together with about 100 reproductions in marble, terra cotta, and plaster of Greek and renaissances culpture, and marble and terra cotta reproductions of furniture, etc.

The museum building, erected 1896–7, with an addition by James C. Parrish in 1903, is surrounded by several acres of garden in which the trees, numbering about 175 varieties, are labeled with their botanical and common names.

A library of about 100 volumes on art and travel is also accessible to the public and in the main hall of the museum building, which contains a pipe organ, free lectures on general educational subjects and musical entertainments are given from time to time.

Mr. Parrish has published a historical, biographical, and descriptive catalog of the museum.

SYRACUSE:

ONONDAGA HISTORICAL ASSOCIATION. (311 Montgomery Street.)

This association maintains a collection of historical objects and antiques illustrative of American history, life, customs, and manners; portraits of famous Americans and prominent Onondagans; and specimens illustrating the flora of Onondaga County. These collections occupy five floors of the society's building and were first exhibited to the public in 1863. About ten years later they were retired from public view and again opened to visitors in 1894. The library of the association contains 2500 volumes, chiefly Americana, and both library and museum are open free to the public.

SYRACUSE MUSEUM OF FINE ARTS.

No reply has been received to repeated requests for information regarding this museum.

SYRACUSE UNIVERSITY.

The university maintains a museum, in charge of Charles W. Hargitt, professor of zoölogy, Thomas C. Hopkins, professor of geology, and Wm. L. Bray, professor of botany; which is at present in process of transfer into new buildings not yet furnished for museum purposes.

BOTANY. Cryptogams, 1000; Phanerogams, 5000.

GEOLOGY. Minerals, on exhibition, 2000, in storage, 3000; Rocks, 1000; Dynamic geology, relief maps, models, etc., 30; a collection of calcites said to be the finest in the United States outside of Albany.

PALEONTOLOGY. A reference collection of 680 cataloged specimens chiefly invertebrates; Ward casts of fossil vertebrates.

ZOÖLOGY. Shells, 8000; Other invertebrates, 500, including 25 types and figured specimens, chiefly coelenterates; Fishes, 200; Batrachians, 50; Reptiles, 50; Birds, 300; Mammals, 25.

TROY:

RENSSELAER POLYTECHNIC INSTITUTE.

The institute maintains a suitable teaching collection, including approximately 1500 fossils, 5000 minerals, 3000 rocks, 10,000 shells, a small number of other animals, a herbarium of 5000 plants, 300 specimens of woods, a small ethnological collection, and a series of relief models and maps. This material is in charge of John M. Clarke, professor of geology.

UTICA:

ONEIDA HISTORICAL SOCIETY.

This society has a collection of articles of local historical interest in the Munson Williams Memorial building, the home of the society, where it also maintains a historical library.

WATERLOO:

WATERLOO LIBRARY AND HISTORICAL SOCIETY.

In addition to a general library of 8000 volumes this society has a collection including 1100± anthropological specimens; a few oil paintings; coins of the United States and other nations; 200 old or rare books; a collection of rocks; and maps, documents, and other material of local historical interest. The society receives an annual income of $500 from endowment, $100 from the state, and $100 from memberships and entertainments.

WATERTOWN:

JEFFERSON COUNTY HISTORICAL SOCIETY.

This society is said by Thwaites to maintain a museum of local history in a room in the Flower Memorial Library.

WEST POINT:

UNITED STATES MILITARY ACADEMY.

ANTHROPOLOGY. A few implements of the stone age, and a small collection of Indian pottery.

ART. The library contains portraits of Jefferson, Monroe, and nine army officers by Thomas Sully; a bronze equestrian statue of Washington by R. S. Greenough; a bronze portrait bust of General Sherman by St. Gaudens; marble busts of Frederick the Great and von Moltke (the gifts of the German Emperor) and of Washington, Lafayette, and Napoleon; and plaster busts of the most famous military commanders of the world. A marble stele by St. Gaudens commemorates the artist Whistler and a marble door-way and tablet the poet, Edgar Allen Poe. A number of bronze and plaster medals are owned also. The library's collection of 80,000 volumes includes many important works on architecture and other arts.

Geology. Minerals, 4500; Rocks, 644. There is also a collection of several thousand specimens of minerals and rocks for laboratory use.

Paleontology. Invertebrates, 8500; Vertebrates (chiefly fishes), 150; Plants, 200. This collection includes 112 fossils from the Solenhofen limestone; 200 plant leaves from the Dakota cretaceous; and a good general collection.

Ordnance. This collection includes implements of present and past military service and is probably of more general interest than the other collections, which are maintained for teaching purposes.

NORTH CAROLINA

CHAPEL HILL:

UNIVERSITY OF NORTH CAROLINA.

The university has teaching collections in lithology and economic geology, and has access to the collections of the state geological survey. There are also small collections in other departments.

CONCORD:

SCOTIA SEMINARY.

The seminary has a considerable collection of minerals.

DAVIDSON:

DAVIDSON COLLEGE.

In addition to a general teaching collection the college possesses the Brumby collection comprising about 1200 minerals, 3500 fossils, and 2000 shells. It was acquired by the college about 1870.

DURHAM:

TRINITY COLLEGE.

The college maintains small teaching collections, including a good collection of bird skins, skeletons for use in the study of comparative anatomy, and local collections of shells and other invertebrates from Beaufort, N. C. and Woods Hole, Mass. The collection is in charge of James J. Wolfe, professor of biology, but has no regular funds for development.

TRINITY COLLEGE HISTORICAL SOCIETY.

No reply has been received to repeated requests for information concerning this society, which is said by Thwaites to maintain a collection of portraits and articles of local historical interest in the library of Trinity College.

RALEIGH:

NORTH CAROLINA STATE MUSEUM.

Staff. Curator, H. H. Brimley; Assistant curator, T. W. Adickes; Director of hall of history, F. A. Olds; Usher, A. H. Lewis; 1 janitor, 1 night watchman, and 1 engineer.

Anthropology. About 1000 objects relating to the native races of North Carolina.

Art. 1 case of chinaware, illustrating the possibilities of North Carolina kaolin.

Botany. 60 jars of native forest seeds; 322 specimens of native woods; 500 jars of native medicinal plants; and 500± forestry specimens in storage.

Commerce and Industry. A small collection of kalmia and rhododendron blocks illustrating the "briar" pipe industry; collections illustrating the turpentine industry and the possibilities of ornamental native woods; a large collection of agricultural and horticultural specimens and photographs; building stones of North Carolina; a large series of photographs and transparencies illustrating many of the industries of the state.

Education. An over-crowded exhibit occupying 300 square feet of floor space devoted to the public schools of North Carolina.

Geology. Minerals, on exhibition, 2400, in storage, many hundred; Rocks, 600; Relief maps, 1; Native ores and economic minerals, on exhibition, 3000, in storage, many hundred; Native building and ornamental stones, 128; Meteorites, a small collection; Diamond drill cores and artesian well borings. Special attention is given to the non-metallic economic minerals, including talc, corundum, kaolin, mica, monazite, semi-precious stones, and native gold.

HISTORY. 7000 objects illustrating the history of North Carolina, including paintings, photographs, war relics, books, utensils, vehicles, manuscripts, letters, autographs, etc. This is said to be the largest state collection in the country.

PALEONTOLOGY. Small collections of invertebrate and vertebrate fossils.

ZOÖLOGY. Insects, on exhibition, 7000; Other invertebrates, on exhibition, 300, in storage, 200±; Fishes, on exhibition, 131, in storage, 200±; Batrachians, on exhibition, 68, in storage, 200±; Reptiles, on exhibition, 150, in storage, 200±; Birds, on exhibition, 364, in storage, 1500±; Mammals, on exhibition, 70, in storage, 300±. There are also collections of native furs; bird eggs; and skulls of birds, mammals, and reptiles. There are 31 small and 3 large groups of animals exhibited in natural surroundings, including the opossum, snowy owl, double-crested cormorant, loon, bob-white, ducks, squirrels, anhinga, eagles, deer, mink, etc.

HISTORICAL SKETCH. The nucleus of the present museum is the collection of minerals and fossils accumulated by the state geologist, whose office was established in 1850. Since 1879 the museum has been a division of the state department of agriculture. It at first occupied one small room over a store; from 1881 to 1894 it occupied two rooms covering about 3000 square feet of floor space in the present building; in 1895 two more rooms were added, bringing the floor space up to a total of less than 7000 square feet. Since 1895 the floor space has increased fourfold and the collections more than tenfold under the administration of the present curator. The hall of history was established in 1902 by the present director of that department.

FINANCIAL SUPPORT. By the state department of agriculture; additions and repairs to the building are charged against the general fund of the department; new cases and new material are frequently acquired indirectly through participation in various expositions. It is therefore impossible to give financial statistics of value for comparison with other institutions.

BUILDING. The museum occupies 22,626 square feet of floor space for exhibition, and 4200 for offices, workrooms, and storage in the agricultural building.

ADMINISTRATION. By a curator, responsible directly to the commissioner of agriculture on all matters except finances, which are passed upon by the board of agriculture.

Scope. Instruction of the general public and the maintenance of local collections are the chief purposes of the museum. The collections are almost exclusively confined to North Carolina material. An additional function of the museum is the preparation of exhibits representing North Carolina in various expositions.

Library. A small reference library is maintained for the use of the staff.

Publications. The only publications of the museum are semi-annual reports to the board of agriculture, and biennial reports included in the reports of the commissioner of agriculture to the legislature.

Attendance. Open free to the public daily except Sundays and Christmas from 9 to 5 in winter and 9 to 6 in summer. The attendance is estimated at 100,000 annually.

TRYON:

GREEN MUSEUM.

This collection includes a herbarium of 4000 cryptogams and 200 phanerogams; 1314 minerals; 400 invertebrate and a few vertebrate and plant fossils; 550± shells; and a number of corals, sponges, etc. It is now in the private residence of Professor H. A. Green, but has recently been given by him to the town of Tryon, in trust for the Tryon white schools.

POLK COUNTY MUSEUM.

This museum was gathered for the Tryon board of trade by a committee of which H. A. Green was chairman. It is at present housed in the Laneer Library, which is open free to the public twice each week. The collection includes 71 minerals, 100± specimens of native woods and leaves, and a collection of local Indian relics; everything in the museum is from Polk County. It is hoped soon to have a more suitable housing and to add other collections.

WAKE FOREST:

WAKE FOREST COLLEGE.

A room in the biological laboratory, set apart as a college museum, contains teaching collections used in the science departments. There are also special collections in the departments of chemistry and medicine.

NORTH DAKOTA

BISMARCK:

STATE HISTORICAL SOCIETY.

The State Historical Society was organized in 1895, reorganized in 1903, and permanently established in the state capitol in 1906. It receives $4600 a year from the state for the maintenance of its museum and field work, in addition to the amount received from memberships at $2 a year. It maintains a museum in charge of H. C. Fish, curator, devoting special attention to local history and containing thousands of specimens of the Mandan, Hidatsa, and Arikara Indians, with good exhibits of the Chippewas and Dakotas. There is also a library of 2000 volumes, including a special collection of books on the history of the Northwest, and complete files of state papers.

Lectures are given about the state to citizens, and also in the museum to school children; the total attendance is nearly 4500 a year. The society has published 2 volumes of its Collections.

FARGO:

AGRICULTURAL COLLEGE.

The college maintains teaching collections in charge of a committee of the faculty, consisting of J. H. Worst, J. H. Shepperd, C. I. Gunness, and W. B. Bell. The collections include 100 anthropological specimens; a herbarium of 1135 cryptogams and 7118 phanerogams, chiefly from the West and Northwest; 600 minerals, 300 rocks, and 11 relief maps, models, etc.; 100 invertebrate fossils; and a fair collection of northwestern vertebrates, chiefly Dakota forms. There are also museum collections in connection with the agricultural and chemical departments.

It is proposed to unite the now scattered collections in a new science hall when completed.

UNIVERSITY:

UNIVERSITY OF NORTH DAKOTA. Museum.

The museum is reported by M. A. Brannon, professor of biology, as a general and promiscuous collection possessed of much valuable material but unclassified and without financial support.

The collection is said by Merrill to include 1000 fossils, 2000 minerals, 800 specimens of economic geology, 299 specimens in zoölogy, 4640 specimens in botany, and 650 ethnological specimens.

OHIO

AKRON:

ZOÖLOGICAL PARK.

This zoölogical park of 3 acres was established in 1903 and contains 2 reptiles, 28 birds, and 30 mammals.

BEREA:

BALDWIN UNIVERSITY.

The president reports that a small museum is maintained by the university, but no further information has been received. The collection is said by Merrill to comprise a few botanical specimens, 500 minerals and rocks, 300 fossils, and 300 zoölogical specimens, mostly invertebrates.

CANTON:

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 3 acres, established in 1893, containing 5 reptiles, 120 birds, and 50 mammals.

CINCINNATI:

CINCINNATI MUSEUM ASSOCIATION.

Staff. Director, J. H. Gest; Curators, L. H. Meakin (paintings), C. J. Barnhorn (sculpture), Philip Hinkle (American archeology), F. W. Hinkle (arms and armor); Librarian, Elizabeth Kellogg; 1 cashier and stenographer, 1 superintendent of buildings and grounds, 1 cabinet maker and carpenter, 1 painter, 1 printer, 1 binder, and 12 janitors, watchmen, etc.

Anthropology. Uncivilized peoples: Archeology, native, 30,000; Ethnology, native, 900, foreign, 1100. Civilized peoples, Greek and Roman antiquities not separately enumerated. Life-size ethnological groups are not yet on exhibition but are contemplated.

Art. Sculpture, 61 originals, 173 large and 964 small casts, and ivory carvings, covering the history of art from Egyptian and Greek to modern; Prints and engravings, 1000; Oil paintings, 503, and water colors, 200, especially rich in modern American work; Ceramics, 6000, including prehistoric American, Greek, modern European, and American (2000 pieces of Rookwood, etc.); Textiles, 1168, including special collections of European lace, and textiles from India; Drawings, 1500, including the C. F. Lessing collection; Metal work, 1908, covering the history of the art from Greek and Roman to modern; Arms and armor, 371, from primitive to medieval and modern; Musical instruments, 280; Casts from engraved gems, intaglios, cameos, etc., from classic to modern, 2100; Miscellaneous, including loans and unclassified and uncataloged material. The total number of entries recorded on January 1, 1909, was 74,397.

HISTORICAL SKETCH. The Cincinnati Museum Association was incorporated in 1881 for the purpose of maintaining a museum and of using its contents for public education by means of classes and other activities. The city granted the association a reservation of 19 acres in Eden Park, upon which to erect buildings, but has given no financial aid. The addition of a department of natural history is contemplated as soon as adequate funds are available. The association also maintains a school known as the Art Academy of Cincinnati, established in 1869 and attached to the museum in 1884. It provides instruction to 400 students in drawing, painting, modeling, designing, and applied art.

FINANCIAL SUPPORT. Income from endowment, $35,061; memberships, $1500; admission fees, $2626; other sources, $7000. Of these funds $21,800 are applied to the museum; the remainder to the academy.

BUILDING. The buildings were erected in 1886, 1887, and 1907, at a total cost of about $570,000, paid by the association, aided by private donations. The museum occupies 35,000 square feet of floor space for exhibition, and 16,000 for offices, workrooms, etc. The building also provides 28,000 square feet of floor space used by the academy.

ADMINISTRATION. By the board of trustees through committees of which the director is the executive officer.

SCOPE. In addition to the purposes reviewed above special loan exhibits of contemporary art are held at frequent intervals, and lectures and personal conferences are used to aid visitors in the study of the collections.

LIBRARY. 3500 bound volumes, 5600 pamphlets and catalogs, and 6000 photographs, chiefly relating to art and archeology and intended for the use of both staff and public.

PUBLICATIONS. (1) Annual reports. (2) Catalog of the permanent collections of paintings. (3) Catalogs and lists of special exhibitions, about 20 issued annually. (4) Catalog of the Bookwalter collection. (5) Library book lists. (6) Occasional monographs. (7) Catalog of the Art Academy.

ATTENDANCE. Free Saturdays, 10 cents admission Sundays, 25 cents other days. Artists, students, and classes with teachers always free. Attendance in 1909, 54,088.

CINCINNATI SOCIETY OF NATURAL HISTORY. Museum. (312 Broadway.)

Staff. Director, T. B. Collier; Curators, Walter H. Aiken (herbarium), A. C. Billups (conchology), William Osburn (entomology), H. Wuestner (mineralogy), Charles Andrew (photography); Librarian and curator of paleontology, J. M. Nickles.

Anthropology. A large case of prehistoric relics from Madisonville, including 120 skulls, some pottery, many bones of animals, etc., and about 20 boxes of similar material in storage.

Botany. A classified herbarium of over 4000 species of phanerogams and ferns; the C. G. Lloyd collection of about 10,000 native and European plants not yet arranged; a collection of cryptogams, particularly fungi, which is now receiving special attention.

Geology. The Paul Mohr collection of 2457 minerals and rocks; the Allen collection of 1200 minerals and rocks; and a number of other special collections, making a total of about 4000 specimens representing 360 species and 210 varieties of minerals, with fair collections of rocks, especially marbles, volcanic rocks, and ores.

Paleontology. The Paul Mohr collection of 4390 species; the J. Ralston Skinner collection of paleozoic fossils, and a nearly complete series of the fossils of the Cincinnati region. Much material belonging to this department is in storage for lack of exhibition space.

Zoölogy. A shell collection including 1000 species of marine shells, an extensive collection of land and fresh-water univalve shells, and the E. D. Cope collection of 1500 species of fresh-water gastropods and bivalves. The collection of Naiades is said to be second only to that of the National Museum. A large collection of other invertebrates is for the most part in storage. There is a large vertebrate series well representing the various orders; 2000 unmounted skins of birds and mammals; a collection of skeletons, mostly disarticulated; etc.

Historical Sketch. The society was organized in 1870 and occupied quarters in the Cincinnati College building on Walnut Street until 1877, when it removed to its present building. In 1871 the Western Academy of Natural Science transferred to the Society $351 in money, 265 books, and its collections. In 1872 Mr. Robert Buchanan donated 111 volumes from his library and 3 cases of fossils, shells, and minerals. In 1875 Mr. Charles Bodmann gave the society by his will $50,000. Of this sum $11,500 was spent in the purchase and repair of the property now occupied.

Financial Support. An annual income of $1700 from the Bodmann endowment and about $600 from memberships. The publications are supported by private contributions.

ADMINISTRATON. By a director, responsible to an executive board which is elected annually by the society.

SCOPE. Exploration, research, and public instruction through the maintenance of a museum and library. A winter course of free lectures on popular science is maintained. The museum devotes special attention to local collections.

LIBRARY. The library includes nearly 22,000 bound volumes and pamphlets and is intended for the use of both staff and public.

PUBLICATIONS. 21 volumes of the Journal of the Cincinnati Society of Natural History have been issued since 1878.

ATTENDANCE. Open free to the public on week-days from 8 to 5. There is a registered attendance of about 2000 annually, including classes from the public schools.

CUVIER CLUB.

The Cuvier Club was organized in 1871 chiefly for the purpose of promoting the enforcement of game and fish laws, and restocking the streams with food fishes and the woods and fields with game. As an incident to this work it maintains a small collection of mounted fishes, birds, and mammals, and a small library of natural history. The collection is in charge of Charles Drury, custodian, and is open free to schools and the general public.

HISTORICAL AND PHILOSOPHICAL SOCIETY OF OHIO.

(Burnet Woods Park.)

In addition to a valuable historical library, this society has a small collection of Indian relics and a number of historical portraits, but does not endeavor to develop a formal museum.

LLOYD LIBRARY AND MUSEUM.

This institution is the outgrowth of the private libraries and collections of Curtis Gates Lloyd and John Uri Lloyd, the former supporting the botanical department, the latter the pharmaceutical. It is now incorporated as a free public institution for the benefit of science, and is housed in two four-story fireproof buildings. The first of these, erected in 1902, contains the herbarium and mycological collection, in charge of W. H. Aiken, curator. The general herbarium comprises about 30,000 specimens, while the mycological collection, second to none in the world, contains many thousand dried specimens, particularly of the Gastromycetes, the study of fungi being for many years past the specialty of Mr. Curtis Gates Lloyd.

The second building, erected in 1907–8, is devoted to the Lloyd library of botany, pharmacy, and materia medica, comprising approximately 25,000 bound volumes and over 20,000 pamphlets, under the care of William Holden, librarian, and Edith Wycoff, assistant librarian.

UNIVERSITY OF CINCINNATI. Museum. (Burnet Woods Park.)

STAFF. Curator, ———; Assistants, J. Ernest Carman and Annette Francis Braun; 1 janitor.

ANTHROPOLOGY. A large collection of Philippine pottery, knives, clothing, etc.; a collection of skulls and relics of mound builders.

ART. Casts of sculpture, 25; Prints and engravings, 25.

BOTANY. Cryptogams, 50; Phanerogams, 250.

GEOLOGY. Minerals, on exhibition, 400, in storage, 400; Rocks, in storage, 800; Relief maps, models, etc., 12.

PALEONTOLOGY. Invertebrates, on exhibition, 600, in storage, 600; Plants, in storage, 50.

ZOÖLOGY. Shells, on exhibition, 2000, in storage, 5000; Insects, on exhibition, 2500, in storage, 2000; Other invertebrates, on exhibition, 100, in storage, 1000; Fishes, on exhibition, 50, in storage, 300; Batrachians, on exhibition, 5, in storage, 20; Reptiles, on exhibition, 10, in storage, 50; Birds, on exhibition, 750, in storage, 600; Mammals, on exhibition, 175, in storage, 100. There are 6 small and 7 large groups of animals exhibited in natural surroundings.

HISTORICAL SKETCH. The museum was established in Cunningham Hall in 1900 and moved to larger quarters in McMicken Hall in 1907. At this time a taxidermist was employed as curator to rearrange and relabel the collections and to prepare groups in natural surroundings.

FINANCIAL SUPPORT. Irregular appropriations from the university.

BUILDING. The museum occupies 3000 square feet of floor space for exhibition, and 2500 for offices, workrooms, etc. in McMicken Hall.

SCOPE. College teaching and public instruction.

ATTENDANCE. Open free to the public daily except Sunday from 8.30 to 5.

ZOÖLOGICAL PARK.

This zoölogical park of 63 acres was established in 1875 and contains 125 reptiles, 1200 birds, and 520 mammals.

CLEVELAND:

CASE SCHOOL OF APPLIED SCIENCE. Museum.

STAFF. Curator, F. M. Comstock.

BOTANY. 6000 herbarium sheets, including 2724+ species of the flora of Ohio; and 228 specimens of woods.

GEOLOGY. Minerals, on exhibition, 2842, in storage, a large collection; Rocks, 1714; Dynamic geology, etc., 2181; Economic geology, 1200.

PALEONTOLOGY. 800 + invertebrate, vertebrate, and plant fossils.

ZOÖLOGY. Shells, 743; Other invertebrates, 672; Fishes, 228; Batrachians and reptiles, 236; Birds, 1509 (mounted specimens, skins, nests and eggs); Mammals, 131.

FINANCIAL SUPPORT. $100–$300 annually from the funds of the school.

LIBRARY. 1549 bound volumes and 7196 pamphlets on natural science, intended for the use of the staff and students.

CLEVELAND MUSEUM OF ART.

A number of bequests amounting to about $2,000,000 have been made for the establishment of art galleries in Cleveland. These bequests are under the care of independent trustees and are, for various reasons, not yet fully available for the establishment of a museum. It is expected, however, that an effective organization will soon be achieved and that a building will be erected at a cost of about $1,000,000. A small collection of paintings and objects of art now stored at the Cleveland School of Art is available as a nucleus of the museum. It is probable that a school of fine arts will ultimately be maintained in connection with the museum. The secretary and treasurer is Hermon A. Kelley, 702 Western Reserve Building.

WESTERN RESERVE HISTORICAL SOCIETY. (Euclid Avenue and 107th Street.)

STAFF. Curator, Albion M. Dyer.

ANTHROPOLOGY. Relics, implements, and weapons of the aborigines and early settlers of the Western Reserve; civil war relics; 1 Egyptian mummy; 25 human skulls, many from the vicinity of Cleveland; pottery of the mound builders and the prehistoric peoples of Colorado and Peru; and a collection of Chinese wearing apparel.

GEOLOGY AND PALEONTOLOGY. United States geological survey relief maps and models, and extensive collections which are not yet sorted nor cataloged.

History. An extensive and complete collection of historical maps and atlases covering the entire range of history from the 16th century to the present day; civil war relics; a statue of Oliver Hazard Perry; prints and engravings of Western Reserve, early Cleveland, and vicinity; many oil portraits of local interest; and a collection of garments worn in the United States from colonial times through the civil war.

Numismatics. A good collection, also a collection of Confederate and other paper money.

Zoölogy. A few shells and butterflies.

Historical Sketch. The museum is the result of gifts to the Western Reserve Historical Society, which originated in 1867.

Financial Support. At present there are no special funds for maintenance, but it is expected that an endowment fund will soon be provided for the society, after which the museum will be cataloged and described.

Building. The museum occupies a portion of the building owned and used by the society.

Administration. By a curator, responsible to a board of trustees.

Scope. The museum is not limited in number of departments nor in territory represented. A special effort, however, is made to assemble local collections, and to interest the pupils of the private and public schools, who frequently visit the museum with their teachers.

Library. A library of 30,000 volumes and as many pamphlets is maintained by the society. Collections of books, maps, prints, etc., are exhibited from time to time in the museum. The collection of books on Arctic exploration, of 200 separate titles, is one of the finest in the United States.

Publications. The Western Reserve Historical Society Tracts contain many numbers of anthropological, geographical, and geological interest.

Attendance. Open free to the public daily, except Sundays and holidays, from 9 to 5.

WESTERN RESERVE UNIVERSITY.

The university maintains a small geological and zoölogical collection in charge of F. H. Herrick, professor of biology, and H. P. Cushing, professor of geology. The collections comprise about 6000 specimens in paleontology, including the S. G. Williams collection of 2500 fossils, chiefly of the New York paleozoic; about 2500 minerals; 1200 rocks; 1000 botanical specimens representing the flora of Ohio fairly completely, with considerable foreign material; and about 10,000 zoölogical specimens, including good representations of the fresh-water shells and the birds of the state. Much of this material is derived from the private collections of the late Dr. J. P. Kirtland, H. K. Winslow, and the collections of the Kirtland Society of Natural History. A skeleton of the lobster is the largest in existence with the exception of one or two in the American Museum in New York.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 20 acres, established in 1893, containing 48 reptiles, 112 birds, and 102 mammals.

COLUMBUS:

OHIO STATE ARCHÆOLOGICAL AND HISTORICAL SOCIETY.

Museum. (Page Hall, Ohio State University.)

Staff. Curator and librarian, William C. Mills; Museum assistant, A. Brown; 2 janitors.

Anthropology. Uncivilized peoples: Archeology of Ohio, 100,000; Ethnology of Ohio, 2000. Civilized peoples, modern, 700. The museum consists for the most part of explorations in Ohio under the supervision of the curator and includes representative collections from each county.

Historical Sketch. The Ohio State Archæological and Historical Society was incorporated in 1885, as a revival of the Archæological Society formed in 1875, and has maintained a museum from its beginning.

Financial Support. The society receives approximately the following amounts each year: life memberships, $395; active memberships, $102; income from endowment, $244; state appropriation for current expenses, $2377, for publication, $3200, for field work, $1247.

Building. The museum occupies 7760 square feet of floor space for exhibition, and 1800 for offices and storage, in Page Hall, erected in 1901 by Ohio State University at a cost of $90,000.

Administration. By a curator, responsible to a committee of the society.

Scope. Exploration and research by the staff, college teaching, and public school work.

Library. 4000 bound volumes and 3500 pamphlets on history and archeology, intended for the use of both staff and public.

Publications. (1) Annual publication, 18 volumes issued. (2) Miscellaneous publications, 6 volumes issued.

Attendance. Open free to the public on week-days, from 8.30 to 5.

OHIO STATE UNIVERSITY.

The university maintains teaching collections in connection with its several departments, as follows:

BOTANY. A general herbarium of 30,000 sheets; a state herbarium of 20,000 sheets of spermatophytes and pteridophytes and 10,000 bryophytes and thalophytes; the Kellerman herbarium of parasitic fungi; and about 3000 museum specimens illustrating native trees, medicinal plants, economic products, etc.

GEOLOGY. A small collection of minerals and rocks, and about 2000 specimens illustrating the economic geology of Ohio. The material collected by the state geological survey is required by law to be deposited with the university.

PALEONTOLOGY. A general series of 9000 fossils in which local formations are well represented.

ZOÖLOGY. Shells, 3500; Insects, 40,000; Other invertebrates, 96; Fishes, 289; Batrachians, 45; Reptiles, 100; Birds, 250 mounted specimens and 2500 skins; Mammals, 25 mounted specimens, 50 alcoholic specimens, and 300 skeletons, skulls, and anatomical preparations. The Ohio fauna is well represented in the collection.

DELAWARE:

OHIO WESLEYAN UNIVERSITY.

The college maintains museum collections, in charge of Lewis G. Westgate, curator, as follows:

ANTHROPOLOGY. The William Walker cabinet of American archeology, recently enlarged and rearranged in eight new cases.

GEOLOGY. The Merrick-Trimble collection of minerals; a series of rocks; and specimens illustrating structural and dynamic geology.

PALEONTOLOGY. The William Wood cabinet of casts, containing an almost complete series of Ward's casts; the Mann cabinet of fossils; a very full series of Ohio fossils; and a very fine series of devonian fishes, largely collected and presented by Rev. William Kepler.

ZOÖLOGY. The Prescott cabinet of shells; a collection of corals given by the class of 1881; a collection of marine specimens of the Atlantic coast, collected by Edward T. Nelson, for many years curator of the museum; the Webber-Merrill cabinet of Palestinian specimens, very rich in birds; a collection of native birds, already including over half the species known to Ohio; mounted and unmounted skeletons; and series of anatomical and embryological models.

BUILDINGS. The geological collections are in Sturges Hall, while the remainder are on the third floor of Merrick Hall.

FREMONT:

SANDUSKY COUNTY PIONEER AND HISTORICAL ASSOCIATION.

This association maintains a collection of articles of historical interest, in a room in the Birchard Library.

GREENVILLE:

CARNEGIE LIBRARY. Museum Department.

STAFF. Honorary curator, Charles L. Katzenberger; Curators, George A. Katzenberger, Frazer E. Wilson, and A. C. Robeson; 1 guide, and 1 janitor.

ANTHROPOLOGY. One case of selected Indian implements, and ethnological collections from the Philippines, Japan, Mexico, North American Indians of to-day, etc.

ART. A small collection of material chiefly related to either the anthropological or the historical collections.

BOTANY. A small collection of dried woods, etc.

EDUCATION. Selected specimens of drawing and basketry from the graded schools and handicraft from the kindergarten are exhibited annually.

GEOLOGY. Small collections of minerals and rocks.

HISTORY. Old deeds, manuscripts, books, paintings, household utensils, relics of Indian wars of 1791–5 and of the civil war, and other material illustrating local history.

PALEONTOLOGY. An almost complete unmounted skeleton of *Mastodon giganteus*.

ZOÖLOGY. A small collection.

HISTORICAL SKETCH. The museum was established in 1901 under the direction of the public school board. The nucleus of the museum is the Anthony and Charles L. Katzenberger collection; other material has been added by purchase or loaned indefinitely to the museum. The Greenville Historical Society has been instrumental in securing much of the historical and anthropological material.

FINANCIAL SUPPORT. Special appropriations from the school board.

BUILDING. The museum occupies 5000 square feet of floor space for exhibition, and 300 for offices, etc. in the basement of the Carnegie Library, erected in 1901.

ADMINISTRATION. By a board of curators, responsible to the public school board.

Scope. Public instruction, local collections, and public school work are the aims of the museum.

Attendance. Open free to the public on week-days from 9 to 5.

HIRAM:

HIRAM COLLEGE.

The college has a small teaching collection under the care of George H. Colton, curator, occupying two rooms in the main college building. The collection includes about 3000 Indian relics and other archeological specimens, a small herbarium, 200 minerals and 500 rocks, 150 invertebrate fossils, 200 shells, 30 birds, and 5 mammals. The museum has no regular income.

NORWALK:

FIRELANDS HISTORICAL SOCIETY.

The president reports that the society maintains a museum, but no further information has been received.

OBERLIN:

OBERLIN COLLEGE.

The college maintains teaching collections in connection with its scientific departments and under the care of the following: F. O. Grover (botany); E. B. Branson (geology); F. F. Jewett (mineralogy); Lynds Jones (zoölogy).

Botany. Cryptogams (except ferns), 43,548; Phanerogams and ferns, 90,930. There is also a general collection of fruits, seeds, and woods.

Geology. Minerals, on exhibition, 1000, in storage, but accessible for study, 4000; Rocks, on exhibition, 600, in storage, 5000; Relief maps, models, etc., 5.

Paleontology. Invertebrates, on exhibition, 1000, in storage, 10,000, types and figured specimens, 200; Vertebrates, on exhibition, 100, in storage, 700, types and figured specimens, 23; Plants, on exhibition, 200, in storage, 1000. A restoration of *Dinichthys terrelli* is on exhibition.

Zoölogy. Shells, on exhibition, 2000, in storage, 10,000; Insects, on exhibition, 5000, in storage, 500; Other invertebrates, on exhibition, 3000, in storage, 4000; Fishes, on exhibition, 500, in storage, 1000; Batrachians, on exhibition, 200, in storage, 100; Reptiles, on exhibition, 100, in storage, 100; Birds, on exhibition, 557, in storage, 1600; Mammals, on exhibition, 100, in storage, 200. The figures given are approximate.

Historical Sketch. These collections were maintained as a unit until 1891, when a separate department of botany was created. In 1905 a separate department of geology was formed.

Financial Support. The college expends about $575 a year on the collections.

OBERLIN COLLEGE. Olney Art Collection.

This collection includes 250 oil paintings; 8 water colors; valuable ivory carvings from Japan, China, and Europe; an excellent collection of Satsuma; teakwood cabinets; wood carving; cloisonné; bronze; jade; lacquers; and semi-precious stones.

The collection is administered by a committee of the faculty, C. B. Martin, chairman, and is under the immediate care of Mrs. A. A. Wright, custodian, with the assistance of a student janitor.

SCIO:

SCIO COLLEGE.

No reply has been received to repeated requests for information regarding the college collections, which are said by Merrill to comprise a small anthropological collection, 800 specimens of American plants and woods, 2000 minerals, 500 other geological specimens, and 150 zoölogical specimens.

SPRINGFIELD:

CLARK COUNTY HISTORICAL SOCIETY.

The society maintains a museum occupying about 3200 square feet of floor space, and containing archeological exhibits; a collection of books and manuscripts pertaining to the early history of Clark County, stage roads, stage-houses (taverns), mills and factories; a collection of oil paintings, engravings, and other pictures of old landmarks of the city and county, including mills, taverns, and covered bridges on the old national road; a collection of mill stones and mile stones; bound volumes of Springfield newspapers dating from 1829; war relics and implements of pioneer days; rare coins and paper money; minerals and rocks; a herbarium; and 250 varieties of bird eggs.

The collection is in charge of W. Mayne Harris, secretary and curator, and is open free to the public on week-days from 9 to 4.

TIFFIN:

HEIDELBERG UNIVERSITY.

The university maintains a museum in charge of M. E. Kleckner, curator and professor of biology. The collections occupy about 2500 square feet of floor space and include a small series of relics of American Indians and mound builders; about 200 minerals, including unusual calcites, a good representation of celestites and sphalerites, and a full series of local minerals; a fairly full series of local devonian and Niagara fossils; and a zoölogical collection.

TOLEDO:

TOLEDO MUSEUM OF ART.

Staff. Director, George W. Stevens; Librarian, Grace E. Worts; 1 superintendent of building and 5 minor employees.

Anthropology. Archeology, native, 500, foreign, 680.

Art. Sculpture and casts, 56; Oil paintings, 78; Prints and engravings, 1200; Ceramics, 150.

Historical Sketch. The Toledo Museum of Art was organized in 1903, and is supported by an association of 700 members, including annual members paying $10 a year and sustaining members paying $50 a year.

Financial Support. Income from memberships, $9000 a year. Application for a city appropriation will be made upon completion of the new building.

Building. As a result of a gift of $150,000 from Mr. E. D. Libbey, and other amounts secured by subscription, a building is being erected to cost about $400,000. It is of white marble with a frontage of 250 feet and a depth of 150 feet.

Scope. In addition to its permanent exhibitions the museum maintains about 9 transient exhibits each year, conducts free lectures on art, and coöperates with the public schools in giving daily lectures to the pupils.

Library. A reference library of 2000 volumes on art, intended for use of both staff and public.

Publications. (1) Annual reports. (2) Museum News, issued quarterly.

Attendance. 56,000 in 1909.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 35 acres, established in 1900, containing 30 reptiles, 110 birds, and 160 mammals.

YELLOW SPRINGS:

ANTIOCH COLLEGE.

The president reports that the college maintains a museum, but no reply has been received to repeated requests for further information. The collections are said by Merrill to comprise 20 anthropological specimens, a herbarium of 600 local plants, 500 minerals, 10,000 fossils, and a zoölogical collection, including 3000 unnamed shells, 500 insects unarranged, a small synoptic series of invertebrates, a few poorly mounted skeletons and 2 mounted mammals.

OKLAHOMA

BACONE:

BACONE COLLEGE.

The college has a small collection of Indian curiosities and biological and geological specimens, occupying about 225 square feet of floor space in a room of the library building, and used primarily for teaching purposes.

OKLAHOMA CITY:

OKLAHOMA HISTORICAL SOCIETY.

This society was organized in 1893 and was made a state institution in 1895. It maintains a museum and library in charge of W. P. Campbell, custodian. The museum includes an extensive collection of miscellaneous articles of local historical interest, together with Indian relics and natural history specimens. The library contains books, documents, and photographs relating to Oklahoma and its history, and a collection of rare prints and publications. The society occupies about 1800 square feet of exhibition space in a fireproof building. It receives a state appropriation of $2000 per annum in addition to its membership fees. It publishes a series of annual reports and a quarterly journal. The collections are open free to the public on week-days from 9 to 6.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 10 acres, established in 1905, containing 50 birds and 110 mammals.

OREGON

CORVALLIS:

OREGON AGRICULTURAL COLLEGE.

The college maintains a museum, in charge of A. B. Cordley, dean and professor of zoölogy, comprising a herbarium of 10,000 phanerogams and vascular cryptogams, 1500 fungi, and about 15,000 unclassified specimens; 1000 minerals; 75,000 Oregon insects; and a zoölogical collection, including a valuable collection of Oregon birds, a synoptic collection of marine invertebrates, and a small number of Oregon mammals.

EUGENE:

UNIVERSITY OF OREGON.

The geological department maintains a museum in charge of F. L. Barker, professor of geology. The most important collection is the Condon collection of vertebrate fossils from the John Day beds and other deposits of Eastern Oregon. This material is cataloged and prepared for exhibition. There are also about 3000 minerals and 1000 rocks, including a collection of Oregon building and ornamental stones, ores of the Pacific coast, etc.

There is a botanical collection of about 1000 specimens, and a collection of Oregon woods. In ethnology there is a collection of 325 specimens from Oregon Indian tribes.

PORTLAND:

OREGON ACADEMY OF SCIENCES.

The academy has been promised extensive collections when suitable fireproof exhibition space is obtained.

OREGON HISTORICAL SOCIETY.

This society was organized in 1898, and occupies 7 rooms in the city hall, where it maintains a museum comprising 1702 specimens pertaining to the Indian life and early settlers of Oregon; and 4300 photographs and pictures, including portraits of pioneers, scenic views, and photographs of Indians. The society also maintains an extensive historical library and publishes a quarterly. The museum and library are in charge of George H. Himes, assistant secretary and curator, and an assistant curator. The financial support of the society consists of a state appropriation of $2500 a year, supplemented by membership fees.

PORTLAND ART ASSOCIATION. Museum of Art.

STAFF. Curator, Annie Bell Crocker.

ART. A large collection of casts, and about 15,000 Braun carbon photographs, reproducing the paintings and drawings of the more important galleries of Europe.

HISTORICAL SKETCH. The museum originated in the gift of a large collection of casts by the late Henry W. Corbett, about the year 1896. Later, the collection of carbon photographs and the nucleus of an art library were given by the William S. Ladd estate.

FINANCIAL SUPPORT. There is a small return yearly from membership fees and admissions, but aside from this the support of the museum comes through the generosity of a few private citizens.

BUILDING. A two-story fireproof building affording about 10,000 square feet of floor space was erected in 1905, at a cost of $30,000, through the generosity of Mrs. W. S. Ladd. The site was bequeathed by the late H. W. Corbett.

ADMINISTRATION. By the trustees of the Portland Art Association.

SCOPE. The association offers the use of museum and library to the public, to art classes, and to the schools of the city, and also undertakes special exhibits from time to time of loan and traveling collections.

LIBRARY. About 265 volumes relating to the fine arts, and available for use by the public.

ATTENDANCE. Open to the public on week-days from 9 to 5. Admission is free on Thursday and Saturday afternoons; on other days an admission of 15 cents is charged. The attendance for the year ending November 31, 1908, was about 13,000.

PORTLAND FREE MUSEUM.

STAFF. Curator, Chas. F. Wiegand.

ANTHROPOLOGY. About 600 specimens, chiefly from this country.

ART. Several thousand prints, photographs and engravings, framed pictures, and drawings, of which one-half is in storage for lack of exhibition space.

GEOLOGY. About 5000 minerals and 100 rocks on exhibition, and about 3 tons of unclassified material in storage.

PALEONTOLOGY. 500 invertebrates, 100 vertebrates, and 100 plants, on exhibition, with about the same number, as yet unclassified, in storage.

ZOÖLOGY. 10,000 shells, 1000 insects, 50 fishes, 15,000 birds, and 150 mammals, including 4 groups exhibited in natural surroundings. There are over 2000 specimens in storage, as yet unclassified.

Historical Sketch. The museum had its origin in the collection of shells purchased by the city in 1896 from a collector, Mr. C. Ross, and installed in the city hall. Since that time a large amount of miscellaneous material has accumulated by donation and loan, but much of it is neither classified nor labeled, and a considerable amount is still in storage. A movement is now in progress for the proper classification and arrangement of the collections.

Financial Support. The city council appropriates $1000 a year for maintenance of the museum.

Building. The collections occupy about 30,000 square feet of floor space in the halls and corridors of the city hall.

Administration. By a curator, appointed by the mayor of the city and responsible to city council.

Library. About 10,000 volumes, pamphlets, reports, catalogs, etc., pertaining to every branch of natural history, but not yet arranged.

Attendance. Open free to the public on week-days from 9 to 5 and on Sundays from 2 to 5. The average daily attendance is about 250.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 5 acres, established about 1885, containing 8 reptiles, 148 birds, and 286 mammals.

PENNSYLVANIA

ALLENTOWN:

LEHIGH COUNTY HISTORICAL SOCIETY.

The society maintains a museum occupying about 200 square feet of exhibition space devoted to the history of Lehigh County and the state of Pennsylvania. Special attention is given to the history of the Pennsylvania Germans.

MUHLENBERG COLLEGE.

The college has teaching collections in connection with the departments of chemistry and biology, comprising a herbarium of 3000 specimens, chiefly from Lehigh County; a synoptic collection of about 1000 specimens of invertebrates; a systematic collection of insects, numbering about 3000 specimens; a series of local vertebrates, including the common species of fish, reptiles, amphibia, birds, and some mammals; a general series of 500 minerals; 400 rock specimens illustrating the formations of Pennsylvania, etc.; and about 600 fossils.

BRADFORD:

McKEAN COUNTY HISTORICAL SOCIETY. (Public Library Building.)

This society occupies a part of the public library building, in which it has 4 or 5 cases of historical relics, and portraits of persons prominent in Pennsylvania history. The society has been tendered an important museum of relics collected chiefly in foreign countries by Hon. Lewis Emery Jr., and is awaiting a conveyance from the city of a building suitable for its reception. At present the society has no organized staff and the days appointed for the opening of its rooms to the public have not been strictly adhered to. It is probable that the organization of the museum will soon be placed on a better basis.

BRYN MAWR:

BRYN MAWR COLLEGE.

The college maintains teaching collections in connection with the departments of natural science. The most extensive are those in geology and paleontology; the former is in charge of Florence Bascom, professor of geology, the latter in charge of C. A. Reeds. The geological collection includes 15,000–20,000 minerals, 10,000 rock specimens, and 50 specimens of dynamic geology, relief maps, models, etc. Most of this material is in the Theodore D. Rand collection, which is rich in minerals of the neighborhood of Philadelphia. A large collection of rock specimens and slides owned by the United States geological survey and illustrating the crystalline formation of eastern Pennsylvania, also Miss Bascom's private collection of specimens and slides illustrating foreign and American geology are accessible to students. The paleontological collections include 15,000 invertebrates on exhibition and 2500 in storage, 50 vertebrates, and 100 plants.

DOYLESTOWN:

BUCKS COUNTY HISTORICAL SOCIETY.

The society maintains the following collections under the care of Warren S. Ely, librarian and curator: an Indian collection of 5000 specimens; about 200 prints, engravings, and oil paintings, chiefly portraits of historical interest; a herbarium of 3000 mounted specimens of local flora; small collections in geology; and about 500 bird eggs.

The main portion of the museum is devoted to history and is classified as follows: *Aborigines*—large collection; *Building of the log cabin*—curious and obsolete builders' and artisans' tools; *Light and fire-*

making—ancient lamps, lanterns, and primitive cooking and heating appliances; *Domestic industries*—spinning wheels, flax-brakes, hetchets, cards, reels, swingles, rope twisters, samples of flax (raw and partially prepared for weaving), home-made baskets, beehives, etc.; *Man and animals*—traps, guns of all descriptions, horse gear, curious implements of peace and war, apparel, etc.; *Agriculture*—ancient agricultural implements of all kinds; *Domestic fabrics*—home made linen and wool fabrics; *Local pottery; War relics*, and miscellaneous local historical material. These collections are fully cataloged and include 2100 entries, some of which stand for groups of objects.

The museum collections began in a small way soon after the organization of the society in 1880, but are principally the result of collections made by Henry C. Mercer during the past twenty years. The society receives annually $100 from endowment, $200 from the county, and about $200 from subscriptions and memberships. The building was erected in 1902 at a cost of $25,000 paid for by donations, legacies, and subscription. A library of 2500 bound volumes and several thousand pamphlets, many manuscripts, deeds, etc., and files of local newspapers from 1804. The society has published descriptive catalogs of various collections in its museum and 3 volumes of papers read at its meetings.

The museum and library are open free to the public daily from 8 to 5, and are visited by several thousand persons annually.

EASTON:

LAFAYETTE COLLEGE.

The scientific departments maintain teaching collections, including a large herbarium of the Pennsylvania flora and a general collection of plants; a systematic series of 3000 minerals; 1000 crystals; 500 rock specimens with corresponding sections for petrographic study; 2000 specimens, chiefly ore samples, illustrating economic geology; a synoptic zoölogical collection; and 1000 histological slides.

ERIE:

ERIE PUBLIC MUSEUM.

STAFF. Curator, Thomas L. Austin.

ANTHROPOLOGY. Uncivilized peoples: Archeology, native, 783, foreign, 9; Ethnology, native, 75, foreign, 56. Civilized peoples, modern, 800±.

ART. Prints and engravings, 17; Oil paintings, 3; Ceramics, 40.

COMMERCE AND INDUSTRY. 509 models of machinery, vehicles, and manufactured products.

HISTORY. One room devoted to the history of Erie County; 360 battle flags of the revolution, the war of 1812, the civil war, and the Spanish-American war; 155 specimens from historic places in various foreign countries.

PALEONTOLOGY. Invertebrates, on exhibition, 1149, in storage, 200±; Vertebrates, on exhibition, 142; Plants, on exhibition, 248, in storage, 3500±.

ZOÖLOGY. Shells, on exhibition, 3550, in storage, 250±; Insects, 1274; Other invertebrates, 175; Fishes, 108; Batrachians, 8; Reptiles, 70; Birds, 388; Mammals, 16. Not included in the above are 122 corals; 57 bird nests; 257 bird eggs; and 110 skulls, horns in pairs, teeth, tusks, etc.

OTHER COLLECTIONS. Arms, 312; Coins, 2000; Medals, 614; Paper money, 400.

HISTORICAL SKETCH. The museum began in 1897 with a miscellaneous collection of geological specimens and has grown to its present proportions entirely by gifts or loans, the cases having been furnished by the board of education through the library trustees.

FINANCIAL SUPPORT. The sole income of the museum is a variable appropriation made by the board of education through the library trustees. The curator draws salary as an assistant librarian, while supplies are paid for from the contingent fund.

BUILDING. The museum occupies 4500 square feet of floor space for exhibition, and 500 for offices, etc. in the basement of the library building, erected in 1897.

ADMINISTRATION. By a curator, responsible to the librarian and trustees of the public library.

SCOPE. Instruction of the general public, maintenance of local collections, research by the staff, and public school work are the aims of the museum.

LIBRARY. 50 scientific books for the use of the staff, in addition to access to the public library.

PUBLICATIONS. The report of the curator is printed in the biennial report of the library trustees and officers.

ATTENDANCE. The museum is open free to the public on weekdays from 10 to 12, 1.30 to 5.30, and 7 to 9; on Sundays and holidays from 2 to 5. The total attendance for the year 1908–9 is 41,485.

FRANKFORD:

HISTORICAL SOCIETY OF FRANKFORD.

The society has a small historical collection but has not yet organized a museum.

GERMANTOWN:

SITE AND RELIC SOCIETY OF GERMANTOWN. (Vernon Park.)

This society maintains a museum devoted exclusively to Germantown relics; and a reference library of Germantown imprints and authors, and of all books of local interest.

GETTYSBURG:

PENNSYLVANIA COLLEGE.

The college maintains teaching collections in charge of E. S. Breidenbaugh, curator, comprising 6000 minerals and 3000 rocks; and 6000 botanical specimens, including a general herbarium of the flora of the eastern United States.

HARRISBURG:

HISTORICAL SOCIETY OF DAUPHIN COUNTY.

At the time of going to press the society is in process of removal to a new building, making it impossible to secure detailed information concerning its collections. The museum is estimated to contain about 10,000 articles, including old-time utensils and implements, a large series of paper money, coins, badges, personal effects, rare and curious papers, documents and prints, portraits, pictures, photographs, deeds, business papers, accounts, etc., chiefly relating to Dauphin County. There is also a large collection of Indian relics.

PENNSYLVANIA STATE MUSEUM.

Staff. Director, Thomas Lynch Montgomery; Deputy director, Norman D. Gray; Curators, Boyd P. Rothrock (zoölogy), Alicia M. Zierden (education); Custodians, Luther R. Kelker (history); Assistants, W. J. Durborow (zoölogy), Charles Revie (education); 1 stenographer, 1 watchman, and 4 cleaners.

Education. Exhibits illustrating elementary, secondary, higher, and special education, and school books and magazines; also exhibits of social economy, including public charities, penal institutions, civic associations, department of health, social systems in factory and shops, industrial statistics, and state banking.

Geology. Rocks, on exhibition, 300, in storage, 4 boxes; Relief maps, models, etc., 3.

History. Objects illustrating the life of the early inhabitants of the state—manuscripts, books, implements, furniture, utensils, etc.

Zoölogy. The collections in this department are confined to Pennsylvania, and represent the field work of the curator and one assistant. They include 24 cases of Pennsylvania insects, about 1000 birds, and 200 mammals, mounted or unmounted. Collections of fishes, batrachians, and reptiles are now in progress. There are 25 small groups exhibited in natural surroundings and several larger groups in preparation.

Financial Support. A state appropriation of $10,000 a year.

Building. The museum occupies the second floor of the building of the State Library.

Administration. By a director, responsible to the trustees of the State Library.

Scope. Local collections, public instruction, and school work.

Attendance. Open free to the public from 9 to 4.

HAVERFORD:

HAVERFORD COLLEGE. Museum.

The museum is in charge of Henry S. Pratt, professor of biology, and is now in storage awaiting the erection of a museum building. No money is being spent on the museum at present. It includes a good collection of American phanerogams, ferns, and mosses, with some European species; a collection of minerals and rocks of Pennsylvania; and 4000 European beetles, 1075 native and foreign birds, 422 varieties of bird eggs, and small collections in other branches of zoölogy. The purpose of the museum is college teaching.

LEBANON:

LEBANON COUNTY HISTORICAL SOCIETY.

The society has a small miscellaneous collection of local curios and relics, and a historical library. The contents of both library and museum are estimated as about 4800. The society has the use of the grand jury room in the county court house for its meetings and collections. The secretary is Dr. S. P. Heilman, Heilman Dale, Pa.

MEADVILLE:

ALLEGHENY COLLEGE. Museum.

Staff. Curator, Robert S. Breed, who is also professor of biology; Assistant curator, Charles E. Decker, who is also instructor in geology.

ART. A few well chosen casts of Greek sculpture, lantern slides, and photographs.

BOTANY. Cryptogamic herbaria, 200±; Phanerogamic herbaria, 500±; Plants in fluid, 500±.

GEOLOGY. Minerals, on exhibition, 4000, in storage, 2000; Rocks, on exhibition, 200, in storage, 100; Relief maps and models, 3. The mineral collections are considered among the most important in the museum, and include the Alger, Prescott, and Haldeman collections.

PALEONTOLOGY. Invertebrates, on exhibition, 500, in storage, 500, types and figured specimens, 2; Vertebrates, on exhibition, 50; Plants, on exhibition, 50, in storage, 200±. The collection includes a set of Ward casts mounted, and a collection of local fossils soon to be exhibited. It is expected that this material will be found to include some new species. This department is developing both local and systematic collections.

ZOÖLOGY. Shells, 6000; Insects, 50; Other invertebrates, 675; Fishes, 25; Batrachians, 15; Reptiles, 15; Birds, 200; Mammals, 20. Other collections include a set of embryological models and mounts to show protective coloration. All of this material is on exhibition except about 3000 shells. Both fresh and salt-water aquaria are maintained.

HISTORICAL SKETCH. The museum was established about 1820 by Rev. Timothy Alden, first president of the college. It was largely increased by a gift of about $30,000 from Hon. C. V. Culver in 1865. At that time the main collections of minerals, fossils, and shells, were purchased and housed in Ruter Hall, one of the college buildings in which they still are. Many other specimens have been added since this time through gift and purchase. The present curator has been developing the departments of paleontology, zoölogy, and botany, chiefly through collections made by himself with the assistance of his students.

FINANCIAL SUPPORT. The museum is dependent for financial support upon gifts and irregular appropriations made by Allegheny College, seldom amounting to more than $100 annually.

BUILDING. Erected in 1855 at a cost of $10,000. Number of square feet of floor space available for exhibition, 4000; for offices, workrooms, etc., 200.

ADMINISTRATION. By a curator, responsible to the trustees of Allegheny College.

SCOPE. The museum is intended primarily for college teaching, and secondarily for the accumulation of local collections and instruction of the general public. Occasional notices are published in local papers.

Library. There is no special museum library, but the Allegheny College library contains about 1500 works on geology, botany, and zoölogy.

Attendance. The museum is open two hours a week and the attendance is estimated at 500 a year.

MYERSTOWN:

ALBRIGHT COLLEGE.

The college maintains the following teaching collections in charge of Harvey Bassler, professor of biology and geology.

Botany. Cryptogams, 200; Phanerogams, 800.

Geology. Minerals, 1200; Rocks, 200, including much material from the neighboring Cornwall Ore Hills.

Paleontology. Invertebrates, 900; Plants, 100.

Zoölogy. Shells, 300; Insects, 100; Other invertebrates, 200; Fishes, 20; Batrachians, 15; Reptiles, 20; Birds, 30; Mammals, 20.

These collections originated about 1880 in Union Seminary of New Berlin, Pa., which in 1887 became Central Pennsylvania College and which in 1902 was consolidated with Albright College. The collections occupy 400 square feet of floor space in the department of biology and geology.

NEW BRIGHTON:

MERRICK FREE ART GALLERY, MUSEUM, AND LIBRARY.

Staff. Owner and administrator, E. D. Merrick; In charge of lepidoptera, Frank A. Merrick.

Art. Sculpture, 4; Prints and engravings, 5000±; Oil paintings, 600, of which 300 are the work of E. D. Merrick and 300 the work of other artists of Europe and the United States.

Geology. Minerals, 2500; Rocks, 100.

Zoölogy. Shells, 100; Insects, 50,000±; Birds, 1000±; Bird eggs, 1500±. The insect collection consists chiefly of moths, butterflies, and beetles. There are also 12 small cases of birds and small mammals mounted in natural surroundings.

Historical Sketch. The institution is the outgrowth of a youthful enthusiasm. The owner, upon retiring from business about twenty-five years ago, indulged the love of painting which had been an ambition of his youth, and arranged the art galleries to exhibit his own work, together with that of other artists acquired by purchase. The geological and zoölogical collections and the library are more recent additions, and are not yet fully developed.

Financial Support. The museum is supported entirely by the owner, who has provided for its permanent maintenance a fund yielding an annual income of $12,000, and has also made it his residuary legatee.

Building. Three buildings have been erected, in 1867, 1888, and 1901, at a total cost of $27,000: these afford 25,250 square feet of floor space for exhibition, and about 1000 for offices, workrooms, etc.

Administration. By the owner.

Library. 3000–4000 volumes on science, art, history, and literature.

Attendance. Open free to the public on week-days from 9 to 4.

NORRISTOWN:

HISTORICAL SOCIETY OF MONTGOMERY COUNTY.

The society maintains a small museum of local historical relics.

PHILADELPHIA:

ACADEMY OF NATURAL SCIENCES. (Logan Square.)

Staff. Officers: President, Samuel G. Dixon; Vice-presidents, Arthur Erwin Brown, Edwin G. Conklin; Corresponding secretary, J. Percy Moore; Recording secretary and librarian, Edward J. Nolan; Treasurer, George Vaux, Jr.; Board of curators, Samuel G. Dixon, Arthur Erwin Brown, Henry A. Pilsbry, Witmer Stone. Salaried Staff: Curators, Henry A. Pilsbry, Witmer Stone; Assistants, Henry Skinner, Stewardson Brown, Henry W. Fowler, Edw. G. Yanatta, J. Percy Moore, James A. G. Rehn; Preparator, David McCadden; Assistant librarian, Wm. J. Fox; Aides, Ada Allen (herbarium), E. T. Cresson, Jr. (entomology); Harriet N. Wardle (library). The officers and 12 councilors constitute the council of the academy and transact its business. The board of curators has immediate charge of the museum.

Anthropology. Uncivilized peoples, 21,500. This collection includes the Morton collection of 1100 crania, the Clarence B. Moore collection from the Indian mounds of Georgia and Florida, the collection of the Peary relief expedition from Greenland, and the Haldeman remains of North American Indians and native tribes of British Guiana.

Botany. Cryptogamic herbarium, 50,000, including 100± types and figured specimens; Phanerogamic herbarium, 604,000, including a large number of types and figured specimens. Among special collections may be mentioned those of Buchley, LeConte, Nuttall, Read, Shortt, and others; a large herbarium of old world plants; the Ellis and Everhart collection of fungi; and the George A. Rex collection of Myxomycetes.

GEOLOGY. Minerals and rocks, 29,000, including the William S. Vaux collection, maintained and enlarged from a special endowment fund. In historical geology an extensive collection is available for study but is not arranged for exhibition.

PALEONTOLOGY. 46,000 specimens, including many types and figured specimens. Among special collections are the Lea collection of eocene fossils, the Joseph Wilcox collection of pliocene fossils, the Conrad and Gabb collections, and many vertebrate types of Cope and Leidy.

ZOÖLOGY. 1,500,000 specimens: Shells, 200,000 trays, said to be the largest collection in America, and including many type specimens described by Tryon, Lea, Say, Pilsbry, and others; Insects, on exhibition, 2000, in storage, 370,000, types and figured specimens, 5900±, including the Martindale collection of lepidoptera and the George H. Horn collection of coleoptera; Other invertebrates, on exhibition, 500, in storage, 11,000, types and figured specimens, 100±; Fishes, 40,000, including the Bonaparte collection and many types and figured specimens; Batrachians and reptiles, 18,000, including many types and figured specimens described by Cope; Birds, on exhibition, 9000, in storage, 50,500, types, 600±, including many of Cassin, Gould, and Townsend, and forming one of the best collections in America; Mammals, on exhibition, 500, in storage, 12,000, types and figured specimens, 50±; Local collections, a special exhibition room is devoted to the natural history of eastern Pennsylvania and New Jersey and contains the collection of the Delaware Valley Ornithological Club.

HISTORICAL SKETCH. The academy was founded in 1812 and has had several locations, the present site being occupied in 1876. The building was remodeled and enlarged in 1894 and 1908. It now contains 100,000 square feet of floor space for exhibition, and 50,000 for offices, workrooms, etc., besides the library.

SCOPE. Special emphasis is placed upon exploration and research by the staff, and upon publication. Instruction of the general public is carried on by the maintenance of a free museum and by courses of free lectures.

LIBRARY. The library is the most extensive natural history library in America, and is noted for its complete files of early foreign scientific journals, and its remarkably fine series of systematic works in all branches of zoölogy and botany. The bound volumes number 65,000, and many pamphlets and journals are still unbound. The library is now housed in a new fireproof building and arranged on steel stacks, while adjoining it is a commodious reading room.

Publications. The academy has published a Journal of which the first series of 8 volumes extended from 1817 to 1839; the second series began in 1847 and includes 13 volumes up to 1908. The Proceedings of the academy have been issued in 60 volumes from 1841 to 1908. Additional publications include a manual of conchology, the Transactions of the American Entomological Society, 1867–1908, and the Entomological News, 1890–1908.

Attendance. The museum is open free to the public on weekdays from 9 to 5, and on Sundays from 1 to 5. The library is not open on Sundays. Books are not allowed to be taken from the building.

AMERICAN ENTOMOLOGICAL SOCIETY.

The collections of this society have accumulated since 1859 by gift, purchase, and exchange. In the early days many specimens were purchased for the society by the late Dr. T. B. Wilson; in 1860 Mr. E. P. Cresson presented his entire collection of coleoptera; in 1863 a large collection of European moths was presented by W. H. Edwards; in 1864 Dr. T. B. Wilson presented the original collection of Professor Felipe Poey of Havana; in 1885 W. H. Ashmead presented types of many of his species of parasitic hymenoptera. The collections also include the Charles Wilt collection of coleoptera; the Von Osten Sacken collection of dipterous insects and cynipidous galls; the George H. Horn collection of over 67,000 coleoptera, including many types; the H. F. Bassett collection of cynipidae, including nearly all his types; the S. N. Dunning collection of hymenoptera; the B. Clemens collection of micro-moths, containing nearly all his types; the C. A. Blake collection of lepidoptera; and the Cresson collection of hymenoptera, containing 75,000–100,000 specimens and 2000–3000 types.

The society occupies rooms in the Academy of Natural Sciences (Logan Square) under the terms of an agreement made in 1895, by which the society agreed to continue its library and collections, in charge of its librarian and curator, subject to the by-laws of the academy, in such space as may be provided by the academy. It is provided that no person shall be eligible for membership in the Entomological Society who is not already a member of the Academy of Natural Sciences. The collections are in charge of Henry Skinner, curator.

AMERICAN NEGRO HISTORICAL SOCIETY.

The society has a small collection of pictures, pamphlets, and curios connected with negro slavery in the United States. George W. Mitchell, 908 Walnut Street, is corresponding secretary.

DREXEL INSTITUTE MUSEUM. (Chestnut and 32nd St.)

Staff. Curator, Mary T. MacAlister; Attendant in picture gallery, Elizabeth C. Niemann; minor employees are detailed from the staff of the institute for special duties in the museum.

Art. A gallery of paintings comprising the Anthony J. Drexel and John D. Lankenau bequests; casts from the antique; modern sculpture; French and English prints; oriental and European ceramics; metal work; furniture and wood carving; and textiles. Among special collections may be mentioned the series of Egyptian antiquities collected by Brugsch in 1895; the George W. Childs collection of carved ivories; Sevres white and gold ware of the Louis Philippe and Napoleon III periods; hand-printed cottons of India; fragments of European silks and velvets of the 15th to the 18th century.

Commerce and Finance. A small collection.

Historical Sketch. The museum was begun in 1892 as a part of the work of the Drexel Institute of Art, Science, and Industry.

Financial Support. By appropriations from the general funds of the institute, and by gifts.

Building. The building was erected in 1891, and the museum occupies 8700 square feet of floor space for exhibition.

Administration. By a curator, responsible to the president and a committee of the board of trustees of the institute.

Scope. The primary purpose of the museum is the instruction and artistic cultivation of the students of the institute, but the privileges of the museum are extended to the public.

Library. 36,000 volumes intended for the use of the staff, students, and the public.

Attendance. Open free to the public daily except Sundays and holidays, from October to March, from 9 to 6. No statistics of attendance are available.

HISTORICAL SOCIETY OF PENNSYLVANIA. (1300 Locust St.)

The society maintains a large collection of local historical portraits and relics, in charge of John W. Jordan, librarian. Among the artists represented are: Hesselins, West, Copley, Stuart, Peale, Polk, Wurtmüller, Pine, Wright, Sully, Eicholtz, Inman, Read, Pettit, and Lambdin.

INDEPENDENCE HALL AND NATIONAL MUSEUM.

Staff. Superintendent of buildings, James McCormack; Curator in charge, Wilfred Jordan; Assistant, Sarah Wilson; 3 engineers, 1 special officer, 8 guards, 3 night guards, and 5 janitors.

Art. Sculpture, 25; Prints and engravings, 1000; Oil paintings, 500+; Water colors, 20; Crayons, 50. This collection includes many valuable portraits of the colonial and revolutionary period.

History. Colonial and revolutionary relics, many of which are very valuable.

Financial Support. An annual appropriation of $12,860 from the city.

Building. Independence Hall comprises three main buildings. The central building was designed by Andrew Hamilton, and erected about 1736 by the province of Pennsylvania; the two others were erected after the close of the Revolution for the county of Philadelphia.

Administration. By the bureau of city property in association with an advisory board of 8 members appointed by the mayor.

Library. A few reference books intended for the use of the staff.

Attendance. Open free to the public daily except Sunday from 9 to 4. No statistics of attendance are available but the number of visitors is estimated at 1,000,000 a year.

NUMISMATIC AND ANTIQUARIAN SOCIETY OF PHILADELPHIA.

This society does not maintain a museum of its own but has on deposit with the Pennsylvania Museum in Memorial Hall, Fairmount Park, about 5000 coins and medals. The society was founded in 1858 and maintains a library of 1500 books and 4000 pamphlets at 1300 Locust Street.

PENNSYLVANIA ACADEMY OF FINE ARTS. Museum.

Staff. Secretary and manager, John E. D. Trask.

Art. General collections representing the various schools and periods in art; a collection of American paintings, said to be the best in existence; examples of sculpture, and nearly 50,000 engravings and etchings. The series of American paintings begins with those of Benjamin West, Charles Willson Peale, Gilbert Stuart, and Washington Allston, and continues with the works of Trumbull, Krimmell, Gray, Huntington, and May, with representative portraits by Rembrandt, Peale, Sully, Eicholtz, Neagle, and Inman, thus bringing the series to the period of contemporary art.

There are the following special collections: The Carey collection consists of examples of the earlier British school of painters, with a number of works by American artists. The Temple collection has been accumulated with the income from a fund established in 1880 by Joseph E. Temple for the purchase of works of American artists shown in the exhibitions of the academy; it now includes 36 paintings. The Gibson collection was received in 1896 by bequest of Henry C. Gibson, and consists of 5 pieces of sculpture and 98 paintings, principally masterpieces of contemporary French and German art. The Field collection of paintings, chiefly works painted before the 19th century, was received in 1887 as the gift of John W. Field and his wife. The print collection includes the John S. Phillips collection of about 40,000 engravings and etchings bequeathed by him to the academy.

HISTORICAL SKETCH. This is said to be the oldest art institution in the United States, having been organized in 1805 in Independence Hall. Its first building, supposed to have been designed by Benjamin Latrobe, was erected on the north side of Chestnut Street. By 1870 the requirements of the academy had outgrown this building and in 1876 the present building was completed and dedicated.

FINANCIAL SUPPORT. The endowment of the institution was undertaken in 1886, when $100,000 was subscribed for this purpose. This has since been increased to $202,000. The Temple fund consists of $60,000, the income of which is expended one-half for the acquirement of pictures and the award of the Temple medal, and one-half for the current expenses of the academy. The Gibson collection is maintained by the income of a special fund of $10,000. The Phillips collection has an endowment of $12,000 for its care and increase.

BUILDING. Erected in 1876 at a cost of $543,000 from designs prepared by Furness and Hewitt, the building has a frontage of 100 feet and a depth of 265 feet, and contains in addition to the galleries, print room, and library, the executive offices, schools, and lecture room.

SCOPE. In addition to the permanent collections, annual exhibitions are held which bring together some of the best examples of American painting and sculpture. The academy also maintains the oldest school in America devoted exclusively to the cultivation of the fine arts.

LIBRARY. An excellent art library.

ATTENDANCE. Open free to the public on week-days from 9 to 5 and on Sundays from 1 to 5. The attendance in 1909 was 182,228.

PENNSYLVANIA MUSEUM. (Memorial Hall, Fairmount Park.)

STAFF. Director, and curator of American pottery and porcelain, Edwin Atlee Barber; Assistant curator, Mrs. Cornelius Stevenson; Honorary curators, F. D. Langenheim (numismatics), Mrs. John Harrison (textiles, lace, and embroidery), Mrs. Jones Wister (oriental pottery), Alfred D. Pell (European porcelain), Cornelius Stevenson (arms and armor), Mrs. W. D. Frishmuth (musical instruments), Alexander S. Calder (sculpture, marbles, and casts), Augustav Ketterer (furniture and woodwork), Charles E. Dana (prints, manuscripts, book plates, and historic seals); Librarian and registrar, Frances C. Wolfe; 3 general assistants, 1 foreman, 10 guards, 3 engineers, 2 night watchmen, and 1 catalog seller.

ART. 40,000 specimens of industrial, decorative, and fine art, as follows: Sculpture in marble, stone, and unglazed terra cotta, 434; Mosaics, 6; Carvings in ivory, bone, and horn, 565; Woodworking, book panels, furniture, picture frames, marquetry, lacquer, and basket-work, 854; metalwork, iron, steel, copper, lead, bronze, brass, and pewter, 1826; Coins, medals, medallions, and embossed plaques, 5000; Arms and armor, 262; Silversmith's work, including plate, 514; Jewelry and goldsmith's work, gems, crystals, carved shell, amber, coral, lapis lazuli, etc., 508; Enamels on metals, 388; Pottery, earthen and stoneware, 5000; Porcelain, 3000; Glass vessels, mirrors, and personal ornaments, such as beads, rings, etc., not jewelry, 810; Painted and stained glass, 69; Leather work, including bookbinding, 79; Textiles and embroideries, 1236; Lace, 566; Musical instruments, 317; Oil paintings, 280; Water colors, drawings, fans, miniatures, engravings, and books illuminated and with engravings, 373. The collections of American pottery, porcelain, and glass are the largest and most comprehensive in existence.

HISTORICAL SKETCH. The Pennsylvania Museum and School of Industrial Art was chartered in 1876 for the purpose of establishing a museum of art in all its branches and technical application, with a special view to the development of the art industries of the state, and to maintain practical schools, special libraries, etc., for instruction in drawing, painting, modeling, designing, etc. The museum in Memorial Hall was opened in 1877, and the collections have been open free to the public since 1881.

FINANCIAL SUPPORT. The annual income of the museum is as follows: from general endowment, $1652; from Temple trust fund, for purchase of art objects, $13,000; from subscriptions and memberships, $1350; from the Fairmount Park commissioners for maintenance of building, $11,000; total, $27,002 (1908). The income given for the museum is independent of the income for the maintenance of the school.

Building. Completed in 1876 for the Centennial Exhibition but designed as a permanent art museum. The cost was $1,500,000, of which the state paid two-thirds and the city one-third. The Pennsylvania Museum occupies 70,000 square feet of floor space in this building, which also accommodates the Wilstach Art Gallery.

Administration. By a director and a museum committee, responsible to a board of trustees.

Scope. The purposes of the museum are the development of the industries of the state, furnishing material for instruction in the school, research by the staff, and the maintenance of a bureau of identification.

Library. About 2600 titles on art subjects intended for use of both staff and public.

Publications. (1) Annual reports, 33 issued to 1910. (2) Museum Bulletin, issued quarterly since January 1903. (3) Monographs and catalogs, about 30. (4) Art handbooks, 2. (5) Art primers, 4. (6) A general handbook of the museum.

Attendance. Open free to the public every day in the year; Sundays, 1 to 6, Mondays, 12 to 5, other days, 9 to 5. The average yearly attendance is about 400,000.

THE PHILADELPHIA MUSEUMS.

Staff. Director, W. P. Wilson; Secretary, Wilfred H. Schoff; Curator, Charles R. Toothaker; Curator's assistants, George T. Hastings, Geo. P. Goll, B. Meade Wagenseller; Photographer, Fred D. Maisch; Librarian, John J. MacFarlane; Chief of foreign trade bureau, Dudley Bartlett; Editor of bureau publications, Horace S. Morrison; Chief assistant in the bureau, George C. Gibson; Superintendent of buildings and grounds, C. D. Williason; 2 stenographers; 1 cashier; 6 minor curatorial assistants; 2 assistants in photography; 3 assistants in the library; 23 clerks, stenographers, translators, and printers in the foreign trade bureau; 8 watchmen and guards; 5 cleaners; 1 engineer and an assistant; 2 firemen; a variable number of carpenters and painters.

Collections. The exhibits are both geographic and monographic. In the geographic exhibits the object is to show in one place all that pertains to the people, industries, and products of one country. The monographic exhibits show the different varieties of one substance or of one group of articles in all parts of the world.

The geographic exhibits shown at the present time are from Japan, China, Indo-China, Siam, India, Ceylon, Siberia, the Philippines, South Sea Islands, Hawaii, Egypt, Tunis, Algeria, Morocco, Soudan, Senegal, Guinea, Liberia, Dahomey, Congo, Somaliland, German East Africa, British Central Africa, Cape Colony, Madagascar, all the republics of South America, Central America, Mexico, and the West Indies.

The monographic exhibits are classified as cereals, legumes and food stuffs, beverages, spices, fibers, oil seeds, woods, gums and resins, ores, economic minerals, skins, hides and leathers, silk, etc. The Philippine exhibit alone covers 14,000 square feet of floor space and is typical of the geographic exhibits. It contains large series of Manila hemp, rice, gutta percha, and other raw products, showing all the commercial grades and varieties. Pina, maguey, cotton, and other fibers are shown in great variety, with samples of the various textiles made by the Filipinos. There is a large collection of Philippine woods, ores, and economic minerals. More than half the exhibit might be classified as ethnology for it contains everything that is necessary to show the life and industries of the people. In includes house models, life-size groups showing the people engaged in their customary occupations, series of basketry, matting, household utensils, weapons, tools, agricultural implements, etc.

The geographic exhibits are especially rich in material from West and Central Africa, China, Japan, and the Philippines. There are now on exhibition 16 life-size figures.

The number of specimens is hard to estimate, as it has not yet been possible to catalog the collections. There are probably 50,000 ethnological specimens. Much of the material might be classed as ethnology, economic botany, geology, zoölogy, industrial art, and commerce. Under art there is a series of paintings in oil by Japanese artists of the modern school who have studied in Europe. Contrasting with these is a series of paintings by foremost Japanese artists in the old style. An exhibit showing the history of commerce covers 6000 square feet of floor space and includes a series of models accurately made to one scale showing merchant vessels of the world in the types used since earliest times. A series of maps indicates the changes of national boundaries in their relation to the development of important commerical highways and trade routes from the dawn of history. Samples of the most important articles of commerce in each period are shown with the maps. The exhibit is supplemented with a large series of pictures showing typical means of transportation from the most primitive to the most modern methods.

FOREIGN TRADE BUREAU. This bureau is devoted chiefly to the development of international trade. It has a very complete equipment and an extensive chain of correspondents throughout the world which enable it to furnish information regarding foreign markets and business methods. It maintains a translation department by the aid of which exporting houses can carry on correspondence with their clients in all parts of the world in any language. It also receives thousands of inquiries annually from foreign merchants desiring to purchase American-made goods. These inquiries are promptly turned over to manufacturers in a position to supply the lines asked for.

HISTORICAL SKETCH. The Philadelphia Museums were organized in 1894. The first department developed was the Commercial Museum, with exhibits of commercial products of all kinds, designed chiefly to aid merchants and manufacturers in securing foreign trade. Educational work has since become an important activity in the museum.

FINANCIAL SUPPORT. The museum receives a variable income from the city. The amounts appropriated for 1909 were as follows: maintenance, $40,000; repairs, $2000; grounds, $1000; power house, $3000; supplies, $12,000. Special appropriations are received from the state legislature for special purposes. In 1909 appropriations to run two years were made as follows: For preparation and installation of exhibits, $20,000; for permanent improvement of buildings, $25,000; for educational work in the state, $25,000.

The Foreign Trade Bureau is supported by subscriptions from business firms which use its services. $36,000 was received from this source in 1909.

BUILDINGS. There are three permanent exhibition buildings originally constructed by the United States government for the National Export Exposition in 1899. Improvements on these buildings have been made by appropriations from the state and city. There are 178,000 square feet of floor space available for exhibition, and 34,000 for offices, workrooms, etc. The buildings are so constructed that the floor space may be nearly doubled when necessary. There is in addition a power house built of granite and steel at a cost of about $100,000, and a storage building with a floor area of 120,000 square feet, a greenhouse, stable, tool house, etc. The total cost of the buildings to date has been about $850,000.

ADMINISTRATION. By a director, responsible to a board of trustees composed of prominent citizens who hold office by appointment of the mayor, and eight ex-officio members, including the governor of Pennsylvania, the mayor of Philadelphia, and other officials.

Scope. The aims of the institution are (1) to give information to American manufacturers and foreign and domestic merchants, in order to aid the business interests of the United States. (2) To assist in the education of children of Pennsylvania, especially along geographical and commercial lines. (3) By means of attractive exhibits and lectures to interest and instruct the general public. Lectures are given daily to classes from the city schools and there are frequent lectures to the general public. Collections of commercial products are extensively and systematically distributed free to public high schools and all the lower grades in Pennsylvania. These are supplemented by many sets of lantern slides, accompanied by descriptive lectures, stereopticons, and screens, loaned without charge.

Library. 26,000 books and 46,000 pamphlets. These books cover every subject bearing on the trade, industries, and resources of this and foreign lands. 623 trade papers are received regularly, of which 350 are from foreign countries; also the official gazettes from 60 different governments, as well as statistical, geographical, and other periodicals. The publications containing the statistics of imports and exports of 70 different governments are regularly received. There are 410 directories in the library, of which 280 are foreign, including nearly all the large cities throughout the world and all the cities of the United States with 100,000 population. The library is unique in its collections of statistical publications, directories, trade papers, and consular reports of our own and other nations. It contains also a large number of scientific publications and works pertaining to the various industries. Books of travel as necessary adjuncts to commercial information are kept up to date. There is also a valuable collection of books on the history of commerce.

Publications. Annual reports; miscellaneous bulletins descriptive of the exhibits and educational work; and frequent reports of a statistical nature bearing on foreign commerce. The Foreign Trade Bureau publishes Commercial America, circulated abroad for the purpose of informing foreign buyers concerning export goods made in this country, and the Weekly Bulletin, circulated among manufacturers in this country for the purpose of informing them of foreign trade conditions. A series of reprints of writings illustrating the history of commerce is also under preparation.

Attendance. Open free to the public on week-days from 9 to 5 and on Sundays from 1 to 5.

PRESBYTERIAN HISTORICAL SOCIETY. Museum and Gallery. (Witherspoon Building.(

This society maintains a museum with collections relating to the history of Presbyterian churches in the United States, as follows: church seals, arms, etc.; 10,000± prints and drawings; communion tokens; pewter and silver plate; church furniture; miscellaneous relics; and an extensive collection of books and manuscripts. These collections are in charge of Alfred Percival Smith, curator, and are open free to the public on week-days from 10 to 5, except on Saturday, when the hours are 10 to 12.

UNITED STATES MINT. Numismatic Collection.

This collection was established in 1838 and has been increased slowly by a small allowance from the incidental and contingent appropriation of the mint. It now includes about 20,000 coins and medals representing nearly all countries and arranged geographically and chronologically. It occupies 2025 square feet of floor space for exhibition and is open free to the public daily except Sundays and holidays from 9 to 3.30. The attendance in 1909 was about 100,000. The collection is in charge of T. L. Comparette, curator.

UNIVERSITY OF PENNSYLVANIA.

Teaching collections are maintained in connection with the several science departments of the university as follows:

BOTANY. A herbarium of 23,000 sheets; 1200 alcoholic museum specimens illustrating comparative morphology; an extensive collection of alcoholic specimens for class use; a set of De Royle botanical models; and a botanic garden including 3200 species of living plants.

GEOLOGY. An exhibition series of 20,000 minerals, representing nearly all known species and including the Genth, Cope, Howell, Clay, Bement, and Cardeza collections; 2000 specimens of rocks illustrating the typical formations of America and Europe; 2000 specimens of economic geology, including ores from all the principal western mining localities; and a series illustrating historical geology.

PALEONTOLOGY. 15,000 specimens, including a series of fossils from the paleozoic formations of New York, some of which are the type specimens described in the Paleontology of New York; a duplicate set of a part of the invertebrate fossils collected by the geological survey of Pennsylvania; cretaceous fossils from the western states; cenozoic and mesozoic fossils from the Gulf and Atlantic coasts. There are also monographic collections of certain groups, *e.g.*, Bryozoa by Ulric, and Ostracoda by Bassler.

ZOÖLOGY. The osteological collection of Prof. E. D. Cope, including his series of mammalian skeletons, and the Hyrtl collection of nearly 1000 beautifully prepared fish skeletons; 10,000 invertebrates, including the Leidy collection of parasites; the Wheatley collection of fresh-water mollusks of the world; and material obtained from the Bahamas and Jamaica by the university expedition of 1887 and 1890-91. There are also models and preparations illustrating embryology and anatomy; and a vivarium containing living marine, fresh-water, and land animals.

UNIVERSITY OF PENNSYLVANIA. The University Museum.

STAFF. Director, G. B. Gordon. Anthropological section: Curator, G. B. Gordon; Assistant curator, George H. Pepper (American archeology and ethnology); Assistants, Frank G. Speck and Edward Sapir (general ethnology). Babylonian and general Semitic section: Curator, Hermann V. Hilprecht; Assistant curator, Albert T. Clay. Egyptian section: Curator, David Randall-MacIver; Assistant curator, C. Leonard Woolley. Mediterranean section: Curator, William N. Bates.

COLLECTIONS. The anthropological section contains large collections of American ethnology and archeology, notably the George G. Haye collection; collections from Borneo and other parts of the Malay Archipelago; and a general ethnological collection. There is also a collection of European prehistoric archeology.

The Babylonian and general Semitic section contains a large number of cuneiform tablets and other valuable antiquities discovered by the Babylonian expedition of the University of Pennsylvania during several years exploration at Nippur.

The Egyptian section has been a subscriber for many years to the Egypt exploration fund and the Egyptian research account, and the museum has also sent several expeditions to excavate in Egypt and Nubia. The collections which have been gathered from these various sources are among the largest and most important in the country. They are especially rich in pre-dynastic material, and represent admirably the various dynasties down to the Roman period. A notable feature is the unique collection of Nubian antiquities discovered by the Coxe expedition.

The Mediterranean section contains valuable collections of marbles, pottery, and bronze objects from Greece and Italy, and includes a notable collection of Etruscan antiquities, and a valuable Cretan collection made by excavations carried on at Gournia under the auspices of the museum.

Financial Support. Entirely from private sources.

Building. The building is of brick, and was planned in 1898 to be built in sections, of which about one-fifth has already been erected.

Scope. The scope of the museum is archeological and ethnological, the archeology coming down as late as the Roman period. It is intended to afford the university material for instruction and investigation and to offer free educational facilities to the public.

Library. A reference library is maintained in the museum primarily for the staff and students.

Publications. The museum has published a Babylonian series, an Egyptian series, and an anthropological series dealing with investigations carried on in several sections. It also publishes Transactions at irregular intervals.

Attendance. Open free to the public on week-days from 10 to 5 and on Sundays from 2 to 6. The average yearly attendance is 50,000.

UNIVERSITY OF PENNSYLVANIA. Wistar Institute of Anatomy and Biology.

The Wistar Institute, M. J. Greenman, director, maintains as one of its activities a research museum, including extensive series of preparations and material relating to human and comparative anatomy. Extensive experiments have been made in museum installation, including metal cases, exhibition jars, storage cases, etc. The institute has an income of $50,000 a year from an endowment given by J. J. Wistar. It maintains an anatomical library of 6860 volumes and 5388 pamphlets, and subscribes to 64 anatomical or zoölogical journals. The greater part of the resources is expended in the maintenance of a research staff. The institute publishes the following journals: *Journal of Morphology*, *The Journal of Comparative Neurology and Psychology*, *The American Journal of Anatomy*, *The Anatomical Record*, and *The Journal of Experimental Zoölogy.*

WAGNER FREE INSTITUTE OF SCIENCE. (17th St. and Montgomery Ave.)

Staff. Superintendent, John G. Rothermel; 1 general assistant and 1 janitor.

Anthropology. Archeology, native, 3000±, foreign, 24.

Geology. Minerals, on exhibition, 5000±, in storage, 1400±; Rocks, 326±; Relief maps, models, etc., 5.

Paleontology. Invertebrates, on exhibition, 20,000±, in storage, 8000±, types and figured specimens, 123±; Vertebrates, on exhibition, 278, in storage, 32; Plants, on exhibition, 200, in storage, 150±.

ZOÖLOGY. Shells, on exhibition, 16,000±, in storage, 14,000±; Insects, on exhibition, 10,000±, in storage, 1200±; Fishes, 200±; Batrachians, 58±; Reptiles, 100±; Birds, 326±; Mammals, 200±. In addition to these there is a synoptic collection from protozoa to vertebrates of 418 specimens. 44 small groups of animals are mounted in natural surroundings.

HISTORICAL SKETCH. The institute was founded by Professor William Wagner as the result of a course of free lectures on scientific subjects given at his house in 1847. The building of the institute was completed in 1864 and courses of free lectures have been continuously maintained up to the present time. The institute was incorporated in 1855. After the death of Professor Wagner in 1885 the trustees prepared to open the museum and library to the public; the latter was opened in 1889 and the former in 1891.

FINANCIAL SUPPORT. An income of about $20,000 from endowment by the founder.

BUILDING. Erected in 1864 by the founder, the building provides 18,596 square feet of floor space for exhibition, and 11,885 for lecture hall, libraries, offices, laboratories, workrooms, etc.

ADMINISTRATION. By a superintendent, responsible to a board of trustees.

SCOPE. The museum is intended to maintain synoptic, systematic, and local collections for public instruction in connection with the free libraries and free lecture courses of the institute. The museum has been the basis of much research work published by the institute.

LIBRARY. A scientific reference library of 25,000± bound volumes and 50,000± unbound volumes and pamphlets, intended for the use of both staff and public.

PUBLICATIONS. 6 volumes of Transactions have been published.

ATTENDANCE. Open free to the public on Wednesday and Saturday afternoons from 2 to 5. No statistics of attendance are available.

W. P. WILSTACH COLLECTION. (Memorial Hall, Fairmount Park.)

The gallery contains 500 oil paintings and 25 water colors. It was founded in 1892 by the bequest of Mrs. Anna H. Wilstach who devised the sum of $700,000, 166 oil paintings, 15 water colors, and 200 books on art to the city of Philadelphia, in charge of the commissioners of Fairmount Park. The collection is under the care of E. A. Shunk, custodian, assisted by a librarian, 2 guards, and 5 minor employees. The custodian is responsible to a committee in charge of the gallery, appointed by the commissioners of Fairmount Park. The collection occupies 10,000 square feet of floor space for exhibition, and 2000 for offices, etc., in Memorial Hall. The library consists of 300 volumes on art intended for the use of both staff and public. The gallery is open free to the public daily from 9.30 to 5, and the average attendance is 350,000 a year.

ZOÖLOGICAL SOCIETY OF PHILADELPHIA. Zoölogical Gardens. (Fairmount Park.)

STAFF. Secretary and general manager, Arthur Erwin Brown; Superintendent, Robert D. Carson; Pathologist, Herbert Fox.

COLLECTIONS. Amphibians, 75; Reptiles, 1012; Birds, 952; Mammals, 487.

FINANCIAL SUPPORT. City appropriation through the commissioners of Fairmount Park, $25,000; Membership dues, $885; Admission receipts, $25,506; Rents, $250; Interest, $1680; Sale of animals, $210; Sale of guides, $465; Goat and donkey rides, $1190; Sundry receipts, $1610.

BUILDINGS AND GROUNDS. These cover an area of 35 acres.

ADMINISTRATION. By a general manager, responsible to the board of directors of the society.

SCOPE. Exhibition of living animals. Autopsies are made on all animals which die in the collections.

PUBLICATIONS. An annual report.

ATTENDANCE. Open daily from 9 until sunset. Admission, 25 cents, children 10 cents, except on Saturdays and holidays when the fee is 10 cents for adults and 5 cents for children. The attendance for 1908-9 was 174,830.

PITTSBURGH:

CARNEGIE INSTITUTE. Department of Fine Arts.

STAFF. Director, John W. Beatty; Secretary to the director, Carolyn S. Lapsley; Acting assistant to the director, J. Arthur Garber; Curators, Will J. Hyett (paintings, prints, etc.), A. Zeller (architecture, sculpture, and bronzes).

ART. Sculpture, 69; Oil paintings, 84; Architecture, 110; Original drawings, 139; Japanese prints, 37; Bronzes, 356. The art department is rich in the works of modern painters, especially in landscapes.

HISTORICAL SKETCH. Founded by Andrew Carnegie in 1896.

FINANCIAL SUPPORT. An annual income of $60,000 provided by Mr. Carnegie.

Building. The department occupies 64,825 square feet of floor space for exhibition galleries, 4218 for offices, and 14,252 for workrooms and storerooms in a building erected by Mr. Carnegie in 1907 at a cost of over $6,000,000, and occupied jointly by the institute, the library, and the music hall.

Scope. Primarily public instruction. The art department holds an annual international exhibition open to artists of all countries, at which gold, silver, and bronze medals are awarded, with prizes of $1500, $1000, and $500 respectively.

Library. A working collection of about 500 books.

Publications. An annual report and catalogs of exhibitions.

Attendance. Open free to the public on week-days from 10 to 10 and on Sundays from 2 to 6.

CARNEGIE INSTITUTE. Department of the Museum.

Staff. Director, and curator of paleontology and entomology, W. J. Holland; Honorary curators, A. A. Lambing (history), George H. Clapp (conchology); Curators, A. E. Ortmann (invertebrate zoölogy), C. H. Eigenmann (ichthyology); Assistant curators, O. E. Jennings (botany), W. E. C. Todd (birds and mammals), P. E. Raymond (invertebrate paleontology); Custodians, D. A. Atkinson (reptiles), Hugo Kahl (entomology); Assistant to director, custodian of mineralogy, and accession officer, Douglas Stewart; Assistants, Victor Sterki (conchology), Earl Douglass and O. A. Peterson (paleontology), H. G. Klages (entomology), L. H. Townsend, A. M. Dierdorf, and G. A. Link (taxidermic laboratory), Mrs. O. E. Jennings (botany), D. C. Hughes (archeology and ethnology); Collectors, J. D. Haseman (ichthyology), M. A. Carriker, Jr., and José Steinbach (zoölogy); Preparators, A. S. Coggeshall (paleontology), R. H. and J. A. Santens (zoölogy); Assistant preparators, L. S. Coggeshall and Serafino Agostini (paleontology); Modeler and sculptor, T. A. Mills; Modeler and foreman of shops, William Banks; Modeler in paleontology, Emil Poli; Librarian, M. J. Gittings; Artist, Sidney A. Prentice; 2 stenographers, 3 cabinet makers, and 1 laborer. 20 guards, janitors, engineers, etc. are employed by the Carnegie Institute.

Anthropology. Uncivilized peoples: Archeology, native, 10,000±, foreign, 13,000±; Ethnology, native, 9000±, foreign, 2000±. Civilized peoples, ancient, 7200±, modern, 200±. There are 14 life-size ethnological groups on exhibition. This department includes the largest collection of Costa Rican antiquities in the United States, of which Professor C. V. Hartman has described and figured 530 specimens and many others are now being figured for publication; large collections of Etruscan and ancient Egyptian antiquities; and a very complete set of reproductions of ancient bronzes from Pompeii and Herculaneum.

ART. Ceramics, 4000±; Textiles, 600±; Bronzes, 1200+; Ivory and wood carvings, 400±, including collection of H. J. Heinz; Gems and gem stones, 6000±, including the Lewis collection of about 5000 specimens; Numismatics, 12,000; Armor and weapons, 2500±, including the Irwin-Laughlin collection of Japanese spears; H. J. Heinz collection of 103 watches; Graphic arts, 150±; Reproductions of 252 silver reliefs by Peter Flötner, donated by Mr. Herbert Dupuy.

ASTRONOMY. Small collections of meteorites; photographs; and a collection illustrating the manufacture of astronomical instruments.

BOTANY. Cryptogams, 21,500, including 8 types and figured specimens; Phanerogams, 128,200, including 12 types and figured specimens; Economic collection, 840.

COMMERCE AND INDUSTRY. Large collections illustrating the evolution of methods of transportation, and various manufacturing processes.

GEOGRAPHY. Relief maps of Pittsburgh, Western Pennsylvania, and foreign countries.

GEOLOGY. Minerals, on exhibition, 4000, in storage, 35,000±; Rocks, on exhibition, 450, in storage, 200±. The Jefferis collection of minerals, made by the late Dr. Jefferis of West Chester, and purchased for the museum by Mr. Carnegie, contains many rare specimens, some of them figured in Dana's mineralogy. The collection of the late Professor Gustave Guttenberg is also incorporated in the collections.

HISTORY. A large collection of objects relating mainly to the history of Western Pennsylvania, many of which have been figured and described.

PALEONTOLOGY. Invertebrates, on exhibition, 3500±, in storage, 100,000±, types and figured specimens, 832; Vertebrates, on exhibition, 1800±, in storage, 18,000, types and figured specimens, 315; Plants, on exhibition, 200±, in storage, 2500±, numerous types and figured specimens. The collection of mounted skeletons includes that of *Diplodocus carnegiei* and many others of great interest; it is one of the largest collections in the United States and includes the celebrated collection of Baron Ernst Bayet of Brussels, representing Europe, and the large collections made in the Western United States through the generosity of Mr. Carnegie.

Zoölogy. Shells, on exhibition, 4500, in storage, 120,000, types, co-types, and figured specimens, 256; Insects, on exhibition, 3800, in storage, 1,125,000±, types, co-types, and figured specimens, 6250±; Other invertebrates, on exhibition, 725, in storage, 19,500±, types, co-types, and figured specimens, 40; Fishes, on exhibition, 215, in storage, 30,660±, types, co-types, and figured specimens, 482; Batrachians, on exhibition, 150, in storage, 2400, types, co-types, and figured specimens, 2; Reptiles, on exhibition, 300, in storage, 4200±, types, co-types, and figured specimens, 6; Birds, on exhibition, 1641, in storage, 29,923, types, co-types, and figured specimens, 25; Mammals, on exhibition, 173, in storage, 1661, types, co-types, and figured specimens, 5. The shells of the Holland and Hartman collection, owned by the museum, contain many types and co-types of Adams, Bland, Lea, Anthony, and Hartman. The Sterki collection also contains many types. The Holland collection of lepidoptera contains the types of W. H. Edwards, Theo. L. Mead, many of Walsingham, Butler, and others, and all the types of species described and figured by Holland in various books and papers. The Ulke collection contains many species described by Leconte and Horn and referred to as in this collection. The museum also contains Dr. Hamilton's types of coleoptera, many of Ashmead's types of South American chalcids, many of Calvert's types of South American odonata, and of Bruner's types of South American orthoptera. The entomological collection is one of the largest in North America. There is a large and increasing collection of bird nests and eggs. 9 large and 23 small groups of animals are exhibited in natural surroundings.

Historical Sketch. The Carnegie Museum is one of the three departments of the Carnegie Institute of Pittsburgh, to which Mr. Carnegie has given for buildings and endowment approximately $20,000,000. It began its work in 1897 and has been almost continuously under the care of the present director, W. J. Holland. The work of research and the formation of the collections was begun in a small way, but has grown rapidly, and there have been no less than 40 exploring and collecting parties in the field at different times. 5 parties have been sent to South America, 2 to Costa Rica, 1 to Labrador, 1 to Hudson Bay, 24 to the fossil-fields of the West, 3 to Africa, 1 to Texas, 2 to Canada, 1 to Florida, and 1 to the Bahamas. The museum is maintaining a continuous biological survey of the upper valley of the Ohio and its tributaries. It has employed a score of collectors in different parts of the world.

Financial Support. By an income of $85,000 annually from endowment, supplemented by special gifts from the founder, who has alone borne the expense of the paleontological researches and has given many important collections to the museum.

Building. Erected in 1897–1907 at a cost of $7,000,000. The museum occupies about one-third of the building, having 52,500 square feet of floor space for exhibition, and 36,000 for offices, work rooms, etc. The building also houses the Carnegie Library of Pittsburgh and the Department of Fine Arts of the Carnegie Institute.

Administration. By a director, responsible to a board of trustees represented by a committee of seven.

Scope. Exploration, research, school work, and instruction of the general public. Collections are loaned to schools, lectures are given for their benefit, and prize essay contests are held at the museum.

Library. 15,000 bound volumes and 12,000 pamphlets on natural science intended for the use of both staff and public. The library is rich in works on paleontology, entomology, and ornithology, and has large series of publications of learned societies of Europe and America.

Publications. (1) Annals, 1 volume issued annually, 7 volumes published. (2) Memoirs, issued at irregular intervals, 4 volumes published and 3 in course of publication.

Attendance. The museum is open free to the public on week days from 10 to 10, and on Sundays from 2 to 6. The number of visitors in 1909 was 450,000±.

UNIVERSITY OF PITTSBURGH.

The university maintains the following collections in connection with related departments in the college, the school of engineering, and the school of mines: The Smith cabinet of mineralogical and zoölogical specimens; an extensive study series of minerals; many Ward casts of fossils; models of mines; physiological and anatomical models; etc.

ZOÖLOGICAL PARK.

The city maintains zoölogical collections covering 15 acres, established in 1894 and 1896, and comprising 59 reptiles, 685 birds, and 285 mammals.

POTTSVILLE:

SCHUYLKILL COUNTY HISTORICAL SOCIETY.

This society was organized in 1903, and occupies a room in the building of the Young Men's Christian Association. Its object is to collect and preserve historical records and relics pertaining to the county with special reference to the history of anthracite coal mining. The collections are in charge of H. J. Herbein, librarian and curator, and Claude Unger, assistant. The collections of local historical relics and material relating to the coal industry are still small but are being actively developed. The library contains about 250 bound volumes in addition to maps, pamphlets, and manuscripts. These collections may be seen upon application to the librarian. The society has issued 2 volumes of its publications, including several papers on the history of coal mining, and 1 on the fossil flora of the southern anthracite coal fields. The work of the society is supported by dues from members, supplemented by a small annual contribution from the county.

READING:

HISTORICAL SOCIETY OF BERKS COUNTY.

The society maintains a small collection of local historical relics.

SCRANTON:

EVERHART MUSEUM OF NATURAL HISTORY, SCIENCE, AND ART.

The Everhart Museum was founded and endowed by Dr. Isaiah F. Everhart in 1907. The present building is devoted to Dr. Everhart's private collection of natural history, and to the Hollister collections of Indian stone implements. The museum receives $5000 annually from the endowment and $3000 as a regular city appropriation. The building was erected in 1907 at a cost of $100,000. It is of fireproof construction and provides 12,800 square feet of floor space for exhibition, and 3200 for offices, workrooms, etc. The site covers four acres and was donated by the city of Scranton. The museum staff is not yet selected, the founder acting as curator.

The collections include at present the Hollister collections of 12,000 specimens of Indian stone implements; a collection of woods and seeds of Pennsylvania; anthracite coal fossils; a collection of North American butterflies: North and South American reptiles; mammals of Pennsylvania; 12,000 native and foreign birds; and a series of heads of North American mammals.

The museum is open free to the public on week-days from 7 to 5 and on Sundays from 2 to 5.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 1 acre, established in 1898, containing 12 birds and 62 mammals.

SOUTH BETHLEHEM:

LEHIGH UNIVERSITY.

The university maintains teaching collections in connection with its scientific departments as follows: Anthropology, 1000 weapons and implements of North American Indians; Botany, a collection of 1000 specimens in addition to a series of commercial woods; Geology, 15,000 minerals and 5500 rocks and ores; Paleontology, a synoptic collection of 3000 specimens; Zoölogy, a synoptic collection of 1500 specimens, the Werner collection of 600 North and South American birds, nests, and eggs; and the Packer collection of 1000 shells.

STATE COLLEGE:

PENNSYLVANIA STATE COLLEGE.

The college maintains museum collections in connection with a number of its departments as follows:

Botany. Phanerogams, 4000; Seeds, 1500 species; Woods of Pennsylvania from the state forestry exhibit at the World's Columbian Exposition.

Chemistry. 3500 specimens of chemical products.

Geology. Minerals, 10,000; Rocks, series of European rocks, rocks of Pennsylvania, United States geological survey collection of 200 rock types; Historical geology, a general stratigraphic series collected by the first and second geological surveys of Pennsylvania; Economic geology, 5000 specimens including the Pennsylvania exhibit of ores, minerals, and economic products at the World's Columbian Exposition, a polylith of 281 building stones of Pennsylvania and elsewhere, Colorado ores, Lake Superior iron ores, and German economic minerals and rocks.

History. Material, chiefly manuscripts and photographs, showing the beginning of the college and the growth of 50 years.

Paleontology. 2000 specimens.

Zoölogy. Shells, on exhibition, 100, in storage, 500; Insects, on exhibition, 1500, in storage, 3000; Other invertebrates, on exhibition, 100, in storage, 500; Fishes, on exhibition, 300, in storage, 300; Batrachians, on exhibition, 50, in storage, 50; Reptiles, on exhibition, 50, in storage, 50; Birds, on exhibition, 200, in storage, 300; Mammals, on exhibition, 75, in storage, 50. The preceding figures are approximate. The series of Pennsylvania vertebrates is nearly complete.

SWARTHMORE:

SWARTHMORE COLLEGE. Museum.

STAFF. The museum is in charge of Spencer Trotter, professor of biology.

ANTHROPOLOGY. The Frederick Kohl ethnological collection of Indian weapons, clothing, etc., mostly from Alaska.

BOTANY. The Annie Shoemaker collection and the Eckfeldt herbarium of 2000 Pennsylvania phanerogams.

GEOLOGY. The Joseph Leidy collection of minerals, the Robert R. Corson collection of stalactites and stalagmites from Luray cavern, the Joel Scarlett collection of 3000 minerals and crystallographic specimens, and the educational series of rock specimens from the United States geological survey.

PALEONTOLOGY. A few fossil invertebrates, fishes, and plants.

ZOÖLOGY. The C. E. Parker collection of shells; small collections of butterflies and moths, corals, sponges, echinoderms, and mollusks; a small number of vertebrate skeletons for class work; the Wilcox and Farnum collection of Pennsylvania birds; and a teaching collection in comparative osteology.

FINANCIAL SUPPORT. The museum is supported by the college.

BUILDING. The collections occupy 3000 square feet of floor space in one of the college buildings.

SCOPE. The museum is maintained primarily for college teaching and local collections.

UNIONTOWN:

FAYETTE COUNTY HISTORICAL SOCIETY.

The society maintains a small collection of local historical relics, in charge of James Hannen, secretary and custodian.

VALLEY FORGE:

VALLEY FORGE MUSEUM OF AMERICAN HISTORY.

This museum includes the following collections: The Rev. Jesse Y. Burk collection, and the William S. Green and William L. Fox collection of Indian relics; the Mary Regina Brice collection of historical documents; the Lilla S. Pechin collection of United States postage stamps; a good collection of Washingtoniana; and an interesting civil war collection. Among the more notable single specimens are the marquee used by Washington throughout the Revolution, and the check for $120,000 paid to Lafayette for his services in the

Revolution. The museum is in charge of Rev. W. Herbert Burk, whose address is All Saints Rectory, Norristown, Pa.

It is intended to illustrate the periods of American history, and is used by the public schools of the vicinity. It occupies one room of Patriots' Hall, the erection of which was begun in 1908, and is supported by voluntary contributions amounting to $523 in the first year, by an income of $18.75 from endowment, and by entrance fees which have amounted to $139.50 between September 1, 1909, and May 1, 1910. It is open to the public on week-days from 8 to 5, the admission fee being 10 cents.

WASHINGTON:

WASHINGTON AND JEFFERSON COLLEGE.

The president reports that the college maintains a museum comprising 800 ethnological specimens, 500 species of plants, 2500 minerals, several hundred fossils, and 2000 zoölogical specimens. These collections occupy about 2300 square feet of floor space, and are in charge of the professor of biology.

WASHINGTON COUNTY HISTORICAL SOCIETY.

This society maintains a library and museum for the preservation of material illustrating the history of southwestern Pennsylvania.

WEST CHESTER:

CHESTER COUNTY HISTORICAL SOCIETY.

This society receives $200 a year from the county, and maintains a collection of articles of local historical interest which is open free to the public from 9 to 6. The museum is in charge of Justin E. Harlan and Alice Cochran, curators.

WEST CHESTER STATE NORMAL SCHOOL.

This school maintains a small collection of shells, minerals, and paintings; an Indian collection; and a large collection of animal horns.

WILKES-BARRE:

WYOMING HISTORICAL AND GEOLOGICAL SOCIETY.

Museum.

Staff. The museum is in charge of the librarian, Horace Edwin Hayden.

Anthropology. An unusually fine collection of 25,000 Indian relics of the highest quality, chiefly from the watersheds of the Susquehanna River; the A. F. Berlin collection of 2700 pieces, containing many exceedingly fine and rare specimens from all parts of North America; a series of 15 Indian pots, said to be the finest collection of Algonquin pottery in the United States; valuable collections of colonial domestic utensils; Revolutionary and Wyoming massacre relics; war relics; and Hawaiian, Egyptian, Chinese, Japanese, Philippine, and African collections. There is a numismatic collection of 5000 pieces.

ART. 103 portraits, chiefly of members and benefactors of the society.

GEOLOGY. 3000 minerals.

PALEONTOLOGY. The Ralph D. Lacoe collection of 5000 paleozoic fossils; the Christian H. Sharar collection of nearly 1000 paleozoic fossils from the carboniferous limestone at Mill Creek, Luzerne County, Pa., and 3000 specimens of the anthracite coal flora, including 200 types described by the late curator, R. D. Lacoe, and Professor Leo Lesquereux.

HISTORICAL SKETCH. The society was organized in 1858 to commemorate the successful burning of Wyoming anthracite coal in a domestic grate, February 11, 1808, by Hon. Jesse Fell.

FINANCIAL SUPPORT. The museum is supported from a portion of the general funds of the society, amounting in 1910 to $52,000 including life memberships and gifts for special purposes.

BUILDING. The museum occupies a portion of the society building.

SCOPE. The society holds four regular meetings annually. Its aims are the investigation of local history and geology. The meetings, the library, the museum, and the publications are its chief activities.

LIBRARY. 20,000 books and pamphlets on American history, genealogy, and geology; 1200 bound volumes of local newspapers; also depository for Pennsylvania and national publications. This library is the only one of its kind in northeastern Pennsylvania, no other covering the same field.

PUBLICATIONS. (1) Proceedings and Collections, 10 volumes issued. (2) 25 pamphlet titles, relating to American history, geology, ethnology, numismatics, etc.

ATTENDANCE. Open free to the public on week-days from 10 to 5. Annual attendance 6000–7000.

WILLIAMSPORT:

THE JAMES V. BROWN LIBRARY.

This library maintains an art gallery consisting at present of 30 oil paintings and water colors, 2 pieces of sculpture, and a large set of Copley reproductions of Abbey's Holy Grail. The library building was erected at a cost of $145,000 from the bequest of James V. Brown, who also provided an endowment yielding $10,000 annually. The library and art gallery are open free to the public daily, except Sundays and holidays, from 9 to 9. The library gives lectures to adults and to school children, and holds loan exhibitions of pictures in addition to its permanent collections. The collection is in charge of O. R. Howard Thomson, librarian.

YORK:

YORK COUNTY HISTORICAL SOCIETY.

The society maintains a museum, in its rooms on the third floor of the county court house, in charge of George R. Prowell, curator and librarian. The museum was founded in 1902 and built up largely by voluntary contributions from members of the society and citizens of York. It includes collections of Indian archeology of Pennsylvania not excelled by any other museum outside of Philadelphia or Pittsburgh. There are also collections illustrating the history of southern Pennsylvania from the time of the first settlement, including many historical portraits of great value. There is a complete collection of copper, nickel, and silver coins made at the United States Mint; a complete collection of the eleven issues of continental money made during the revolution. There are biological collections, including a herbarium of 1000 specimens; 2000 local butterflies and other insects; 2000 local birds, small mammals, bird eggs and nests. The departments of history and ornithology are most active at present.

RHODE ISLAND

BARRINGTON:

BARRINGTON HISTORIC-ANTIQUARIAN SOCIETY.

This society was founded in 1885 and maintains a miscellaneous collection of material illustrating the early life of the town and neighborhood. The collection occupies a room in the library and is in charge of Emma S. Bradford, librarian. It is open free to the public.

KINGSTON:

RHODE ISLAND STATE COLLEGE.

The college maintains a small museum collection in charge of John Barlow, professor of zoölogy. In includes over 2000 named species of insects, with a large amount of undetermined material;

a synoptical series of invertebrates; a collection including most of the reptiles and batrachians of Rhode Island; a complete series of Rhode Island birds; and a synoptical collection of mammalia in which all the orders are represented by mounted skins and skeletons.

PAWTUCKET:

ZOÖLOGICAL PARK.

The city maintains a zoölogical park, established in 1900, containing 12 mammals.

PROVIDENCE:

ANNMARY BROWN MEMORIAL.

Completed by Gen. Rush C. Hawkins in 1907 as a memorial to his wife. The collections include family portraits, other personal and family relics, 50 early masters and 45 modern oil paintings, 15 water colors, and about 540 books, illustrating the first half century of printing with movable metal type—nearly all before 1501—and incidentally, the early use of woodcuts for book illustration.

The collection is open free to the public Tuesdays, Wednesdays, and Thursdays, and in summer, Fridays, from 10 to 4.

BROWN UNIVERSITY.

The university maintains collections, primarily for teaching purposes, in connection with the departments listed below.

ART. In the faculty room are temporarily hung 14 paintings by Frank O. Small illustrating scenes in American colonial history. In Sayles Hall is a collection of Rhode Island portraits said to be the most extensive in the state. In Manning Hall are about 20 oil paintings, specimens of early Christian and Indian sculpture, and many pieces of statuary, casts, etc.

BOTANY. 75,000 specimens from all parts of the world but mainly from America. The genus *Carex* is particularly well represented. There are also several cases of unmounted specimens and duplicates. This herbarium is in charge of J. F. Collins, curator, and is housed in Maxcy Hall.

GEOLOGY AND PALEONTOLOGY. The collection of minerals was inaugurated by the late Professors Jenks and Packard and now contains a carefully selected and labeled series of 10,000 specimens representing various types and characteristics. In addition there are about 500 types of rocks for the use of students in petrography, and 15 sets of 100 typical rock specimens each. There are also 100 large specimens illustrating structural geology; a general synoptic collection of 3000 fossils; 50 fossil fishes, and several thousand specimens of carboniferous plants in storage.

ZOÖLOGY. Jenks Museum. The Jenks collection was founded by the late Professor Jenks and developed by Professors Packard, Bumpus, and Mead. It includes the following collections: Shells, in storage, 10,200; Insects, in storage, 4000; Other invertebrates, on exhibition, 500, in storage, 500; Fishes, on exhibition, 25, in storage, 1000; Batrachians, on exhibition, 50, in storage, 85; Reptiles, on exhibition, 45, in storage, 18; Birds, on exhibition, 1100, in storage, 3500; Mammals, on exhibition, 60, in storage, 24. There are also many embryological reconstructions and medical preparations on exhibition and in storage. This department is housed in Rhode Island Hall, and is in charge of Prof. A. D. Mead.

The anthropological collections formerly exhibited in Rhode Island Hall are now in storage.

MOSES BROWN SCHOOL.

The school has an art collection comprising 2 marble busts by Theed, a series of oil portraits, chiefly of persons connected with the history of the school and including a portrait of Whittier by Parker, and a considerable number of prints. There is also a geological collection comprising about 2500 minerals, including the John Griscom collection purchased in 1839; a cabinet of shells; and general teaching collections in botany and zoölogy.

PARK MUSEUM. (Roger Williams Park.)

STAFF. Curator, Harold L. Madison; 2 janitors.

ANTHROPOLOGY. Ethnology, native, 5000, foreign, 100. This department includes the Charles Gorton collection of Rhode Island Indian relics and the James Angus collection of North American Indian relics.

ART. Sculpture, 3 pieces of marble and 1 plaster cast; Prints and engravings, 47; Oil paintings, 6; Water colors, 1; Ceramics, 4 small exhibits; Textiles, 2 small exhibits.

BOTANY. Cryptogams, 250; Phanerogams, 1300±. There are also 100 colored photographs of wild flowers.

COMMERCE AND INDUSTRY. Exhibits of the following local industries: Cut-glass, copper, rubber, cotton cloth, woolens, and leather.

EDUCATIONAL COLLECTIONS. The museum has the following collections which it loans to the city schools: Birds, 5 different sets; Woods, 6 sets alike; Minerals, 6 sets alike; Bird charts, 8; Lantern slides, 230.

GEOLOGY. Minerals, on exhibition, 550±, in storage, 3000±, Rocks, on exhibition, 175±, in storage, 300±; Decorative marble; 103. The James Angus collection of Brazilian agates is said to be one of the finest in the world.

PALEONTOLOGY. Invertebrates, on exhibition, 8, in storage, 1000±; Vertebrates, on exhibition, 30, in storage, 250±; Plants, on exhibition, 40, in storage, 2000±, including many duplicates.

ZOÖLOGY. Shells, on exhibition, 2300±, in storage, 5000±, types and figured specimens, 5; Insects, on exhibition, 300±, in storage, 1200±; Other invertebrates, on exhibition, 250±, in storage, 100±; Fishes, on exhibition, 10 in jars, and 90 colored plates, in storage, 50±; Batrachians, on exhibition, 20, in storage, 50; Reptiles, on exhibition, 100±, in storage, 50±; Birds, on exhibition, 830, in storage, 700± skins; Mammals, on exhibition, 60, in storage, 100± skins. There is one group showing the northern deer in natural surrounding. The shell collections include the Southwick, Blake, and Caroline Richmond collections. There are also collections of commercial sponges and shells.

HISTORICAL SKETCH. The museum was originally intended as an art museum, but has always been used as a natural history museum. The value of the collections is chiefly due to the earnest efforts of the first two curators, Messrs. Southwick and Davis.

FINANCIAL SUPPORT. By city funds appropriated by the board of park commissioners. The average amount of the appropriation is about $3500 a year. After fixed expenses have been met the amount available for exhibits, publications, lectures, etc., is from $400 to $500 a year.

BUILDING. The building was erected by the city in 1894–5 at a cost of $40,000 and affords 3800 square feet of floor space for exhibition, and 1050 for offices, workrooms, etc.

ADMINISTRATION. By a curator, responsible to the board of park commissioners.

SCOPE. Maintenance of local collections, public school work, and instruction of the general public.

PUBLICATIONS. (1) A bi-monthly Bulletin begun in March, 1909. (2) Annual reports, previous to 1909 the reports were published as a part of the report of the board of park commissioners. Since that time the reports have been issued separately. (3) A series of "Museum Bulletins" published previous to 1909 were the personal property of the curator.

LIBRARY. 800 bound volumes and 1200 pamphlets, intended for the use of both staff and public.

Attendance. Open free to the public on week-days from 10 to 5, and on Sundays from 1.30 to 5. No statistics of attendance available.

PROVIDENCE ATHENÆUM.

In addition to its library the Athenaeum has a number of paintings and marble busts, among which may be noted Malbone's miniature picture "The Hours," a miniature of Nicholas Power by the same artist, and his sketch of himself; paintings by Van Dyke, and Sir James Reynolds; and a portrait of Sarah Helen Whitman by Thompson.

RHODE ISLAND HISTORICAL SOCIETY.

This society, established in 1822, maintains a library and museum devoted especially to Rhode Island and New England history. The collections include Rhode Island Indian relics, relics of the early settlers, prints, engravings, and oil paintings of persons and localities of local interest, early household pottery, and homespun fabrics of Rhode Island. The library consists of 40,000 bound volumes and 60,000 pamphlets. Among its rare books are Capt. John Smith's Description of New England, Eliot's Indian Bible, and nearly all of the original editions of the writings of Roger Williams, Samuel Gorton, and other early Rhode Island authors. The society is supported by the income from endowment funds; an annual state appropriation; and subscriptions and annual memberships. The aims of the society are research, the maintenance of local collections, and instruction of the general public and schools. The society has published 10 volumes of its Collections, 8 volumes of its Publications (new series), and 38 volumes of the Proceedings of its business meetings, etc. The museum is on the third floor of the building and is open to the public, with special privileges to members, on week-days from 9 to 4; during August from 10 to 1.

RHODE ISLAND SCHOOL OF DESIGN.

The school maintains a public museum administered by a museum committee, of which E. G. Radeke is secretary. The collections include the following: Sculpture, 350, including casts; Prints, engravings, and autotypes, 900; Oil paintings and water colors, 200; Ceramics, 1600; Textiles, 1500; Furniture, 200; Metals, 500.

The museum occupies 8 galleries in the main building, 3 of which are devoted to oil paintings, water colors, and engravings, 2 to casts of classic and renaissance sculpture, 1 to autotypes illustrating the history of painting, 1 to Japanese pottery, metal work, lacquer, and textiles, and 1 to a representative collection of peasant pottery from many countries. Connected with the other galleries is the Pendleton House, containing a remarkable collection of antique mahogany furniture, rugs, mirrors, porcelain, china, and silver, gathered by the late Charles Leonard Pendleton and presented by him to the school. The house was given by Stephen O. Metcalf in accordance with the stipulation of the connoisseur that a typical colonial house be erected to hold his treasures. The place is unique in that house and furniture are in perfect harmony, giving the impression not of a museum and collection, but of the private mansion of a gentleman of taste and wealth who lived in the 18th century and furnished his house with the best examples of the cabinet makers of that period. 160 copies of a catalog of the Pendleton collection have been published at a cost of $150 a copy.

Both the Pendleton House and the general collections are open to the public daily, at hours varying with the seasons, an admission fee of 25 cents being charged on Mondays, Wednesdays, and Fridays. The number of visitors in 1908 was 64,031.

ZOÖLOGICAL PARK.

The city maintains, in Roger Williams Park, zoölogical collections established in 1891 and comprising 2 reptiles, 186 birds, and 192 mammals.

SOUTH CAROLINA

CHARLESTON:

CAROLINA ART ASSOCIATION. (Gibbes Memorial Art Building.)

This association was incorporated in 1858. In 1906 the association and the mayor of Charleston were made trustees of the Gibbes Memorial Art Building, which was erected in 1904 at a cost of about $85,000, on land worth $15,000, the cost of both land and building being covered by a bequest of the late James S. Gibbes. An endowment of about $8800 is available for the maintenance of the building, while the association has an income of about $500 from memberships. An arts and crafts school and annual exhibitions are maintained, and a beginning of a permanent collection of art objects has been made. A catalog of the annual exhibition is published, and the building is open to the public at certain seasons at an admission fee of 25 cents.

CHARLESTON MUSEUM.

Staff. Director, Paul M. Rea; Honorary curators, William G. Mazyck (conchology), Daniel S. Martin (geology), Arthur T. Wayne (ornithology), Nathaniel W. Stephenson (art); Librarian, Laura M. Bragg; 1 janitor.

ANTHROPOLOGY. A general collection of about 300 cataloged specimens; a small amount of uncataloged local Indian material; and a miscellaneous series of Arctic relics obtained by one of the Peary expeditions. This department includes the oldest specimens in the museum, a number of which were obtained as early as 1798. The collection of South Carolina Indian relics is small but includes some good specimens.

ART. A small number of casts of Greek, Egyptian, and Assyrian sculpture, and a number of portraits of former curators.

BOTANY. The Stephen Elliott herbarium, containing the plants upon which his botany of South Carolina and Georgia is based, with many types; the Henry W. Ravenel herbarium, comprising 57 algae, 459 fungi, 134 lichens, 22 hepatics, 131 mosses, and 15 ferns, all chiefly local material; a series of 300 Alpine plants obtained early in the last century; and a working herbarium of 250 species of the local flora recently begun.

COMMERCE AND INDUSTRY. A traveling exhibit of the iron and steel industry for use in public school work; and material for the illustration of a number of local industries in preparation for exhibition.

GEOLOGY. A carefully selected series of about 3000 minerals, about 300 rocks, and about 50 specimens of dynamic geology. Among special collections may be noted a series of minerals of the Ural Mountains; the Shepard collection of phosphates of lime from all parts of the world, prepared for comparison with local phosphate material and probably unique of its kind; a collection of minerals of the Piedmont and southern Appalachian regions, now in process of formation; and material relating to the phosphate and other industries of South Carolina.

HISTORY. A few war relics and other objects of historical interest not strictly included in the scope of the museum.

PALEONTOLOGY. A synoptic series of about 2000 carefully selected invertebrate, vertebrate, and plant fossils, and a fair collection of fossils from the phosphate beds of South Carolina, only partially worked up. The vertebrate fossils are almost exclusively fragments.

ZOÖLOGY. Shells several thousand specimens: Insects, a small working collection only; Other invertebrates, 224; Fishes, 75; Batrachians, 23; Reptiles, 69; Birds, 1118 (756 mounted); Mammals, 181; Skeletons, 200±; Bird nests and eggs, 400±. The bird collection includes nearly all species recorded for the state, and a general collection from all parts of the world; the mammals include a good representation of the larger species; the skeletons were all mounted by Dr. Gabriel Manigault, a former curator, and represent nearly all orders of vertebrates.

Historical Sketch. This is the oldest museum in the country, as far as is known, having originated sometime previous to 1777 under the auspices of the Charleston Library Society. It was transferred to the Literary and Philosophical Society of South Carolina in 1815, to the Medical College in 1828, and to the College of Charleston in 1850. In 1907 a building was provided by the city and the museum became a public institution.

Financial Support. A fixed annual appropriation of $2500 from the city, supplemented by subscriptions, memberships, etc., amounting in 1909 to about $1700.

Building. Erected in 1899 at a cost of $30,000, the building was devoted to the purpose of the museum in 1907. It affords about 36,000 square feet of floor space available for exhibition, and about 1800 for offices, workrooms, lecture rooms, etc. The city has expended $12,414 in remodeling the building for the use of the museum.

Administration. By a director, responsible to a committee of the trustees of the College of Charleston, under whose auspices the museum is administered.

Scope. Public instruction, maintenance of local collections, and research. The work of public instruction is carried on largely through the medium of a natural history society organized under the auspices of the museum. Special importance is attached at present to a biological survey of South Carolina, beginning with the coast region.

Library. About 3000 volumes and many pamphlets on natural science, geography, and commerce and industry, intended for the use of both staff and public.

Publications. (1) Bulletin, issued monthly from October to May since April 1905. (2) Contributions, issued at irregular intervals, beginning in 1910.

Attendance. The museum is in process of installation in the new building. The attendance in the old building, which was unfavorably situated, was estimated at 10,000 annually.

DAUGHTERS OF THE CONFEDERACY—CHARLESTON CHAPTER.

This chapter was organized in 1894 and maintains a collection of articles of historical interest, chiefly relics of the war between the states, occupying a floor space of about 1000 square feet in Market Hall. The museum is open to the public during the tourist season upon payment of a fee of 25 cents. The number of visitors is between 300 and 400 for the season.

CLEMSON COLLEGE:

CLEMSON COLLEGE. Natural History Museum.

Botany. Cryptogams, 800; Phanerogams, 4600; Special collections, 100± preserved specimens of local fungi and a collection of parasitic fungi of economic importance, together with the host plants.

Geology. Minerals, on exhibition, 1500, in storage, 2000; Rocks, on exhibition, 1000, in storage, 1000; Dynamic geology, relief maps, models, etc., 10. There is also a collection of the rocks and minerals of the state.

Paleontology. Invertebrates, on exhibition, 500, in storage, 250; Vertebrates, 50; Plants, 50.

Zoölogy. Shells, 40; Insects, on exhibition, 5000, in storage, 5000; Other invertebrates, 100; Fishes, 20; Batrachians, 20; Reptiles, 100; Birds, 200; Mammals, 20. Special collections include injurious insects in all stages of their life history, with methods of combating them.

The museum was established in 1904 as an aid to classroom work, the first cases being installed in 1906. It is supported by appropriations from the college, varying from $200 to $500 a year, and is in charge of a committee of the faculty, with F. H. H. Calhoun, professor of geology and mineralogy, as chairman and curator.

COLUMBIA:

UNIVERSITY OF SOUTH CAROLINA.

The college maintains museum collections, primarily for purposes of instruction, as follows: The Babcock collection of about 30,000 Indian relics from South Carolina and neighboring states; 2200± minerals and 700 rocks; several rare pieces of old furniture; a miscellaneous collection of fossils; and a zoölogical collection including the Taylor and Heyward collection of bird eggs, a small series of mounted birds, and the Gibbes collection of shells and crustaceans. The Babcock collection is the largest of its kind extant. The nucleus of the collection of minerals and fossils consists of material gathered by Cooper in Europe and in this country, enlarged and arranged by Brumby and added to from various sources. There is a somewhat extensive collection of fossils of the coastal plain of the state which were probably gathered by Professor Tuomey. The Babcock collection is housed in the library and is open to public inspection; the other collections are in charge of the professors of the related departments and are used mainly for teaching purposes.

GREENVILLE:

FURMAN UNIVERSITY.

Small collections in anthropology, geology, paleontology, and zoölogy form the nucleus of a museum but are not at present on exhibition. It is proposed to set apart a room for this purpose in the new science building.

NEWBERRY:

NEWBERRY COLLEGE. Sifley Museum.

The museum is housed in Keller Hall and comprises collections in anthropology and natural history, intended primarily for teaching purposes.

SPARTANBURG:

WOFFORD COLLEGE.

The college maintains a geological museum in charge of D. A. DuPre, professor of physics and geology, comprising 3000–4000 minerals and rocks, and 500–700 fossils. There are no special funds for the development of the museum but it is attractively installed in a room in Science Hall affording about 2000 square feet of floor space.

SOUTH DAKOTA

PIERRE:

STATE HISTORICAL SOCIETY.

No reply has been received to repeated requests for information regarding this society, which is said by Thwaites to have a museum of antiquities of the state, including relics of Arikara and Sioux Indians, photographs, etc.

RAPID CITY:

SOUTH DAKOTA SCHOOL OF MINES.

The geological collections include approximately 2000 minerals on exhibition and 1000 in storage; 600 rocks on exhibition and 200 in storage; 50 wall maps, 300 crystal models, and 100 specimens illustrating dynamic geology; and 400 economic specimens on exhibition and 200 in storage. There are 2 excellent relief maps of the Black Hills. Special attention is given to local collections. The museum is supported by appropriations from the funds of the State School of Mines, and is in charge of the professor of mineralogy and geology, Cleophas C. O'Harra. There is a library of 500 volumes intended for the use of instructors and students. The museum occupies 2000 square feet of floor space for exhibition, and 500 for offices, etc.

VERMILION:

UNIVERSITY OF SOUTH DAKOTA.

No reply has been received to repeated requests for information regarding the museum of this college, which is said by Merrill to include 1200 botanical specimens, 700 minerals, 400 ores, 300 rock specimens, 1125 fossils representing 500 species, and 900 zoölogical specimens.

TENNESSEE

CHATTANOOGA:

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 3 acres, established in 1896, containing 17 reptiles, 86 birds, and 60 mammals.

CLARKSVILLE:

SOUTHWESTERN PRESBYTERIAN UNIVERSITY.

A teaching collection, including about 6000 minerals, a large collection of rocks and fossils, 16,000 shells, and 500 herbarium specimens.

KNOXVILLE:

UNIVERSITY OF TENNESSEE.

The university has teaching collections in connection with the scientific departments and under the charge of the heads of the departments. The most important collection is the herbarium, which includes 30,000 specimens, among these being many types of Chapman, Gattinger, Scribner, and others. The geological department has collections of minerals, rocks, fossils, ores, and building stones, with a collection of the minerals, ores, and building materials of Tennessee in preparation. In zoölogy there are several thousand insects and a small synoptic collection of other groups. In anthropology there is a small collection of Indian stone implements and relics. Prof. C. H. Gordon is in charge of geology, and Prof. Samuel M. Bain in charge of botany.

LEBANON:

CUMBERLAND UNIVERSITY.

The university maintains the following teaching collections in charge of Kate A. Hinds, professor of natural science: About 600 minerals and a collection of rocks from the United States geological survey; 1500 fossils and several casts of fossils; and small collections of dried and alcoholic zoölogical specimens, with 500 species of Japanese shells.

MARYVILLE:

MARYVILLE COLLEGE.

The college reports that it maintains a museum, but no further information has been received in response to repeated requests. The museum is said by Merrill to comprise over 400 ethnological specimens, 478 botanical specimens, 1000 minerals, 750 fossils, and 300 zoölogical specimens.

MEMPHIS:

COSSITT LIBRARY MUSEUM ASSOCIATION.

This association was organized in 1897 for the preservation and development of material from Shelby County exhibited at the Tennessee Centennial in 1896. The association was given the use of an upper room in the Cossitt Library building and the museum consisted for a number of years almost entirely of loan material. In 1903 the heirs of Mr. Elliston Mason presented to the association a collection of mound-builders relics and one of fossils; the former comprises about 600 specimens collected about the Wappanooka Mounds, and is of especial value as representing the life and habits of one people.

The museum is in charge of Miss Lida Speed, who devotes a part of her time to library work in addition to her duties as custodian. The association has published a catalog of the museum.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 10 acres, established in 1903, containing 1 reptile, 43 birds, and 36 mammals.

NASHVILLE:

TENNESSEE HISTORICAL SOCIETY.

The librarian reports that the society maintains a museum, but no further information has been received in reply to repeated requests.

VANDERBILT UNIVERSITY.

The university maintains teaching collections in charge of the heads of the related departments of the university, as follows: L. C Glenn (anthropology, geology, and paleontology), W. L. Dudley (chemistry), G. W. Martin (botany and zoölogy), H. Z. Kip (art), and E. A. Ruddiman (pharmacognosy).

ANTHROPOLOGY. 5000± specimens of native archeology.

ART. 100± prints and engravings.

Botany. Cryptogams, 1000; Phanerogams, 2000. There are fair collections of seeds, woods, etc. For teaching purposes there is a full set of German charts and specially prepared lantern slides.

Chemistry. 200 museum preparations.

Geology. Minerals, 6000±; Rocks, 2500±; Dynamic geology, relief maps, models, etc., 500±; Economic collections, 100±.

Paleontology. Invertebrates, 15,000±; Vertebrates, 250±; Plants, 750±.

Pharmacognosy. 800 specimens of drugs.

Zoölogy. Shells, 200; Insects, 1000; Other invertebrates, 200; Fishes, 500; Batrachians, 100; Reptiles, 250; Birds, 200; Mammals, 50. There is a good collection of skulls of the lower vertebrates and man. There are also charts, lantern slides, etc.

Financial Support. The various collections are supported from the funds allotted to each department by the university.

Building. The exhibits are in different buildings, each with the corresponding department of the university.

Scope. College teaching.

WALDEN UNIVERSITY.

The bursar reports that the university does not maintain a museum, but its collections are said by Merrill to comprise 150 ethnological specimens from Africa, a collection of coins and currency, a herbarium of 300 specimens representing 150 species, 400 minerals, 100 fossils, and a zoölogical collection, including a general series of 116 mounted birds, a study series of 400 birds of Colorado and Tennessee, 50 sets of bird eggs, 8000 insects, etc.

ZOÖLOGICAL PARK.

This park, occupying 5 acres, was established in 1902 and contains 3 reptiles, 31 birds, and 295 mammals.

TEXAS

AUSTIN:

UNIVERSITY OF TEXAS. Museum of Economic Geology.

This museum is a part of the bureau of economic geology of the University of Texas, and is in charge of William B. Phillips, director of the bureau. The foundation of the museum is the collections made by the geological survey of Texas from 1888 to 1892 when the survey was discontinued. In 1901 a mineral survey was established by the legislature in connection with the university and continued till 1905, when it was also suspended. The valuable material gathered by these two surveys was supplemented by the material secured by the Texas World's Fair Commission for the St. Louis Exposition. The museum is confined to Texas material illustrating the economic resources of the state, of which it has the largest and best collection extant. There are 2500 minerals on exhibition and 1500 in storage. There are also 300 rocks, and economic material including oil, clays, building stones, salt, cement, ores, and rare minerals.

The museum is housed in the engineering building of the university which was erected in 1904. It has no publications as yet but is arranging for two bulletins each year dealing with the mineral resources of the state. It is open free to the public daily except Sunday from 8.30 to 1 and from 2 to 5.30. There are no statistics of attendance.

In addition to the collections described above there are extensive teaching collections connected with the science department of the university. There is also the Swenson collection of 3476 coins and 1846 medals, many of which are rare. This collection is in charge of the professor of history, Dr. George P. Garrison.

HOUSTON:

HOUSTON MUSEUM AND SCIENTIFIC SOCIETY.

This society was incorporated in December, 1909, and proposes to establish a museum to be located in the new Auditorium, now being erected by the city at a cost of $250,000. The museum is to be in charge of C. L. Brock, director, and is to include both science and history.

SAN ANTONIO:

SCIENTIFIC SOCIETY OF SAN ANTONIO. (Stevens Building.)

The society was organized in 1904, and has a collection including approximately 90 specimens of native archeology, 500 minerals, 30 rocks, 150 invertebrate and 20 vertebrate fossils, and a zoölogical collection comprising 300 shells, 150 insects, 125 fishes, and 12 birds. There are 144 photographs, including micro-photographs, of Texas insects, other invertebrates, reptiles, birds, and mammals. The collection is administered by the executive committee of the society, and is open to members and visitors on Friday evenings. There is a library of 700 scientific works. The society publishes an annual report.

ZOÖLOGICAL PARK.

Two zoölogical parks are maintained, one established privately in 1887 and the other established by the city in 1902. The area of these parks is 16 acres and they contain 5 reptiles, 293 birds, and 117 mammals.

WACO:

BAYLOR UNIVERSITY. Museum.

STAFF. Curator, John Kern Strecker Jr.; Honorary assistants, John L. Kesler (general biology), Lula Pace (botany), W. T. Gooch (entomology); 1 student assistant, and 1 janitor.

ANTHROPOLOGY. Archeology, native, 5000, foreign, 406; Ethnology, native, 322, foreign, 242.

BOTANY. The collection is uncataloged at present, but consists largely of local plants, supplemented by a series collected by Miss Pace in several states. The Texas material includes duplicate types of many of Lindheimer's species.

GEOLOGY. Minerals, on exhibition, 1272, in storage, 3401; Rocks, on exhibition, 200, in storage, 650; the Mart (Texas) meteorite, polished and sectioned, with a model of the original mass; and stone meteorites from Fayette County, Texas.

PALEONTOLOGY. Invertebrates, on exhibition, 716, in storage, 1842; Vertebrates, on exhibition, 73, in storage, 346; Plants, on exhibition, 226, in storage, 507. The vertebrate fossils include fish skeletons, a few skulls, teeth, and odd bones, but no large complete skeletons or restorations.

ZOÖLOGY. Shells, on exhibition, 575, in storage, 10,613; Insects, in storage, 8500; Other invertebrates, on exhibition, 683, in storage, 3115; Fishes, on exhibition, 46, in storage, 306; Batrachians and reptiles, on exhibition, 52, in storage, 2786; Birds, on exhibition, 416, in storage, 2123; Mammals, on exhibition, 473, in storage, 2101; Bird nests, 83; Bird eggs, on exhibition, 3916 (908 species); Skulls, fin-backed whale (18 feet 9 inches in length), seals, large cats, wolves, etc. The series of complete skeletons is small.

HISTORICAL SKETCH. Previous to 1901 the collections consisted of a small amount of material for teaching purposes. In that year Mr. George W. Carroll purchased a number of collections and also provided 40 exhibition cases. The material acquired since 1903 has been through donation and exchange.

FINANCIAL SUPPORT. By the university.

BUILDING. The museum occupies 5 rooms in the basement and one on the second floor of the Carroll Science Hall, erected in 1901 at a cost of $75,000 by G. W. Carroll. The museum occupies 3200 square feet of floor space for exhibition, and 256 for offices, workrooms, etc.

ADMINISTRATION. By a curator, responsible to the board of trustees of Baylor University.

Scope. Maintenance of local collections, college teaching, and research.

Library. 2000 bound volumes and 4200 pamphlets relating chiefly to zoölogy and intended for the use of the staff.

Publications. Occasional contributions from the museum are published in the Baylor University Bulletin.

Attendance. Open free to the public daily except Sunday from 8 to 5. No statistics of attendance are available.

UTAH

SALT LAKE CITY:

DESERET MUSEUM.

Staff. President and curator, James E. Talmage.

Anthropology. Archeology, native, 500±, foreign, 50±; Ethnology, native, 1000±, foreign, 500±. This department includes a large collection of desiccated human remains and artifacts from the cliff dwellings in Utah.

Botany. A set of about 150 large papier-maché models of plants.

Geology. Minerals, 600±; Rocks, 100±; Dynamic geology, relief maps, models, etc., 50±. This department has about 25 tons of the large geodes of Wayne County, with selenite crystals.

Paleontology. Invertebrates, 3500±; Vertebrates, 350±; Plants, 250±.

Zoölogy. Shells, 2500±; Insects, 1000±; Other invertebrates, 500±; Fishes, 50±; Batrachians, 20±; Reptiles, 50±; Birds, 400±; Mammals, 100±.

Historical Sketch. The museum was established about 1870 under the name of the Salt Lake Museum. In 1885 it became the property of the Salt Lake Literary and Scientific Association under its present name. Later it passed into the possession of the Church of Jesus Christ of Latter-day Saints, under which it has since been administered. Since 1903 the museum has been closed to the public owing to the lack of a suitable building. A new fireproof building is now in course of construction and it is expected that the greater part of the museum collections will be installed in the summer of 1910.

Financial Support. Hitherto by appropriations from church funds.

Building. The building in course of erection in 1910 will provide 8200 square feet of floor space for exhibition, and 4000 for offices, workrooms, etc.

Administration. By a curator, responsible to a committee of the church.

Scope. Exploration, maintenance of local collections, and instruction of the general public.

Library. A working collection for use of the staff only.

UNIVERSITY OF UTAH.

The curator, Orson Howard, reports that the university maintains a museum, but no reply has been received to repeated requests for further information regarding the collections, which are said by Merrill to comprise a herbarium of 1700 plants, 2000 minerals, 200 fossils, and 2000 zoölogical specimens.

VERMONT

BURLINGTON:

UNIVERSITY OF VERMONT. Museums.

Staff. Curator, G. H. Perkins, who is also professor of geology; Curator of the botanical museum, C. G. Pringle.

Anthropology. Archeology, native, 15,000±, foreign, 500; Ethnology, native, 1000, foreign, 2000. This department includes several thousand specimens of stone, bone, copper, shell, and earthenware objects from the Champlain Valley, with smaller collections from the Ohio and Mississippi valleys and the Pacific coast. The pottery of the mound builders and of Pueblo tribes is represented by jars, dishes, vases, stone and bone implements, basket work, bits of cloth, skulls, etc., from cliff houses in Mancos Canyon, Colorado. There are also collections of weapons, implements, and ornaments of the natives of Australia, Polynesia, Africa, and oriental countries. The Reed collection of objects obtained among the Sioux Indians is of special interest, and there are also similar specimens from the southern tribes. There is also the valuable Lewis collection of Chinese objects. The collection of oriental objects obtained in India by the late Henry LeGrand Cannon is displayed in a room added to the museum by special provision of the donor. It includes fabrics and draperies; bronze and porcelain lamps; chairs, stand, and screen of teak-wood elaborately carved; numerous articles of silver, chiefly ornamental; musical instruments; household articles of brass and iron; Indian, Persian, and Japanese armor; articles of Tibetan origin; and fine specimens of European arms of the 15th and 16th centuries.

Art. Sculpture, 3 marbles and 28 casts; Prints and engravings, 33; Oil paintings, 18; Water colors, 3. This collection was begun in

1873 by the liberality of Trenor W. Park of Bennington, and is known as the Park Gallery of Art. The original plans for its development have not been followed, and for some years nothing has been done toward keeping up the collection. It is housed in the same building with the university museum, but is not under the charge of the curator.

Botany. Cryptogams, 40,000; Phanerogams, 110,000; Economic collections, 2000. The herbarium was begun by Professor Joseph Torrey before the middle of the 19th century. To this have been added collections of tropical ferns by Henry LeGrand Cannon and Mrs. Norman Williams, and western American plants by Professor Perkins and others. During recent years a special effort has been made to secure a complete representation of the Vermont flora. Dr. A. J. Grout has contributed especially to this. Two recent and important additions are the herbarium and botanical library of Charles C. Frost and the herbarium of Cyrus G. Pringle, the latter is probably unsurpassed in quality by any existing collection and ranks in size as one of the large collections of America. It includes most of the known species of flowering plants and ferns of North America and Europe, and a considerable representation from other lands. It is especially rich in Mexican species and contains many types from this region.

Geology. Minerals, 5000; Rocks, 2000.

Paleontology. 5000± specimens of invertebrate, vertebrate, and plant fossils, including 225 types and co-types.

Zoölogy. Shells, 5000; Insects, 3000; Corals and sponges, 300; Fishes, 100; Batrachians, 50; Reptiles, 50; Birds, 1000; Mammals, 100. This collection includes a nearly complete series of the native mammals, birds, and fishes of Vermont. Three groups in natural surroundings have been prepared by Mr. W. E. Balch, the most noteworthy being a group of nine beavers from 6 weeks to 3 years of age, with a full-size section of a lodge, part of a feeding-ground, thirteen feet of a dam, and a representation of a part of a pond. There are a number of the now very rare Blaschka glass models.

Financial Support. The botanical museum has an income of $1000 annually from endowment, while the other departments have an income of $400.

Building. Erected by the university in 1870 at a cost of $10,000. The botanical collections are in the Williams Science Building.

Administration. By the curators of the several departments, responsible to the president of the university.

Attendance. Open free to the public on week-days from 9 to 5. There are no statistics of attendance available.

MIDDLEBURY:

MIDDLEBURY COLLEGE. Museum of Natural History.

Staff. Curator, Edward A. Burt, who is also professor of natural history.

Anthropology. On the first floor of the chapel building are rooms containing a collection of Assyrian tablets, slabs, and casts, and other objects of interest in Semitic history; the Chapman collection of costumes and implements from the Yukon Valley; stone implements; and relics of local and general historical interest.

Botany. A complete series of the flowering plants and ferns of the Champlain Valley, collected by President Ezra Brainerd; a set of Vermont mosses prepared by Dr. Grout; and a collection of the higher fungi of Vermont now being accumulated by Professor Burt.

Geology. A fairly complete working set of minerals; a set of the rocks of Vermont, collected by Professor Adams while conducting the geological survey of the state; and a collection of rocks of Minnesota.

Paleontology. The Adams collection of fossils and the Seeley collection of fossils from the Champlain Valley, especially strong in forms from the Chazy limestone.

Zoölogy. A general synoptic collection of shells; a full series of the land and water shells of Vermont collected and arranged by Professor Adams; a mounted collection of the birds of Vermont; and a collection of marine invertebrates.

Building. The anthropological collections occupy rooms on the first floor of the chapel building, while the science collections are on the second floor of the Warner Science Hall.

MONTPELIER:

VERMONT HISTORICAL SOCIETY.

The librarian reports that the society maintains a museum on a small scale, but no further information has been received.

VERMONT STATE MUSEUM.

Staff. Curator, George H. Perkins, who is also state geologist.

Anthropology. Archeology, native, 280.

Botany. Cryptogams, 100; Phanerogams, 1200; a set of native plants collected and mounted by Mr. C. G. Pringle.

Geology. Minerals, 1300; Rocks, 700. The material in this department is chiefly from Vermont and includes a complete series of the rocks collected by the survey of 1856–60; also a nearly complete set of the marbles, slates, and granites of the state.

Paleontology. 2000 invertebrate, vertebrate, and plant fossils, including a mounted and nearly complete skeleton of *Delphinapterus vermontanus.*

Zoölogy. Shells, 1000; Insects, 1000, mostly in Denton mounts; Fishes, batrachians, and reptiles, 100; Birds, 380; Mammals, 60; Bird eggs, 720. Nearly all the species of birds and mammals of Vermont are represented in the collection.

Financial Support. An annual state appropriation of $500.

Building. The museum occupies rooms in the state house.

Administration. By a curator. The accounts go to the auditor.

Scope. Primarily the exhibition of Vermont collections for the instruction of the general public and the schools.

ST. JOHNSBURY:

THE FAIRBANKS MUSEUM OF NATURAL SCIENCE.

Staff. Director, Delia I. Griffin; Curator, Mabel A. Shields; Assistant, Jessie M. Stevenson; Taxidermist, W. A. Balch; 1 janitor.

Anthropology. Uncivilized peoples: Archeology, native, 1113, foreign, 210; Ethnology, native, 184, foreign, 468. Civilized peoples, ancient, 338, modern, 416. There are two life-size ethnological groups.

Botany. Cryptogams, 770; Phanerogams, 6285; Local herbaria, 598.

Commerce and Industry. Coffee, 14; Spices, 15; Buttons, 27; Cotton, 16; Cocoa, 6; Silk, 56; Roots, 21; Woods, 249; Gums, 39; Seeds, 396; Enemies of Atlantic coast shells, 88.

Geology. Minerals, 1657; Rocks, 232; Dynamic geology, relief maps, models, etc., 114; Special collections, lava and pumice, 107; Vermont minerals (just begun), 60.

History. Colonial exhibit, 78; Old books and documents of the United States, 128; War relics, 40.

Paleontology. Invertebrates, 107; Vertebrates, 18; Plants, 40; Special collections—fossils of Vermont and New York, 236, Brandon fossil fruits, 137.

Zoölogy. Shells, on exhibition, 2611, in storage, 1607; Insects, 5482; Other invertebrates, 317; Fishes, 21; Batrachians, 12; Reptiles, 40; Birds, on exhibition, 1825, in storage, 287; Mammals, 129; Bird eggs, 777; Horns, 37 pairs; Heads, 4; Skeletons, 12; Parts of skeletons, 60. There are 7 large and 7 small groups of animals exhibited in natural surroundings: among these are muskrats in summer and winter homes; moose in summer; buffalo; woodchucks; groups of opossums, flamingoes, and birds of paradise.

Other Departments. Coins, 2000; Stamps, 2794; War envelopes, 696.

Historical Sketch. The Fairbanks Museum originated in natural history collections gathered during many years by Col. Franklin Fairbanks, who erected the building in 1890-91 and endowed the museum with a sum sufficient for its maintenance.

Financial Support. The sole support of the museum is the income from endowment.

Building. The building is of red sandstone with granite trimmings, and provides 9604 square feet of floor space for exhibition, and 1744 for offices, workrooms, etc.

Administration. By a board of five trustees.

Scope. Public school work, local collections, and instruction of the general public. About 200 lectures a year are given to classes from the public schools. Spring bird walks are conducted for classes of children, exhibits are loaned to the schools, and an annual prize bird contest is held. From April to October a flower table is maintained in the museum on which are exhibited specimens of all wild flowers from the vicinity. Occasional free public lectures are given by the members of the staff or by outside lecturers. Weekly articles on the work of the museum are published in the local newspapers. Special attention is given to local collections of plants, woods, minerals, insects, historical articles, and old china.

Library. 835 volumes on science for the use of both staff and public. Books are loaned for circulation outside the library.

Publications. (1) Outline course in nature study for the schools of Vermont, 1908. (2) Outline for the study of bird life, 1905. (3) Bird migration lists, 1907.

Attendance. Open free to the public on week-days from 9 to 12 and 1 to 5 and on Sundays from 2.30 to 5. Estimated attendance, 35,000 per year.

ST. JOHNSBURY ATHENÆUM.

This institution includes a public library, art gallery, lecture hall, and reading room, and is maintained by the income from endowment provided by the founder and his wife. The athenaeum was founded in 1870 by Horace Fairbanks, and the building was erected, equipped, and presented to the town by him in 1871. The art collection includes about 60 works of art—painting, marble, and bronze—and is open free to the public from 9 to 9, Wednesday evenings excepted. The principal painting is Bierstadt's masterpiece, "The Domes of the Yosemite."

WESTFIELD:

HITCHCOCK MEMORIAL MUSEUM.

This museum is in charge of E. S. Miller, curator, and is housed in the public library building. It contains a general natural history collection, including several large groups of Vermont animals mounted in natural surroundings.

VIRGINIA

BLACKSBURG:

VIRGINIA POLYTECHNIC INSTITUTE.

The collections of the department of biology have been built up by Dr. Ellison A. Smyth Jr., head of the department. They were begun in 1891 with his private collection of shells and alcoholic invertebrates, bird eggs and skins, lepidoptera, alcoholic snakes, and dried invertebrates. About 70 birds were mounted, and Dr. Smyth's private herbarium of about 1000 species was added. Later, for convenience and study, the butterflies to the number of about 30,000, and the bird skins to the number of about 1500, were removed to his house, thus escaping a fire which destroyed the Science Hall and the entire museum collection with the exception of a few mounted birds and alcoholic invertebrates. Since that time the department has been installed in the new building, and Dr. Smyth has by personal collecting in the tropics and elsewhere and by purchase more than replaced the earlier collection of corals and shells. These with some alcoholic invertebrates, a few skeletons, the college collection of insects, and a case of mounted birds are now in the department lecture room, as is also the herbarium. A large room in the same building has been set apart for a museum, in which it is proposed that the departments of agronomy, veterinary and animal husbandry, horticulture, and plant pathology will unite with the department of biology in establishing a museum. No special funds are available however for this purpose and whatever work is done upon the museum will be due to the personal interest of the teaching staff in these departments.

CHARLOTTESVILLE:

UNIVERSITY OF VIRGINIA. Lewis Brooks Museum.

This is a large brick building erected in 1879 through the munificence of Lewis Brooks of Rochester, N. Y., and contains large collections of minerals, rocks, and fossils for instruction in geology and mineralogy, and extensive botanical and zoölogical collections for instruction in biology. The number of specimens in the various departments is not known. The lecture rooms, laboratories, and library are also contained in the museum building.

EMORY:

EMORY AND HENRY COLLEGE.

The college has made a small beginning in the establishment of a museum of natural science.

LEXINGTON:

WASHINGTON AND LEE UNIVERSITY. Museums.

ART. Bradford Art Gallery. Bequeathed to the university by the late Vincent L. Bradford of Philadelphia, and endowed by him with an annuity sufficient for its maintenance and for annual additions to the collection. It is situated on the second floor of the library building, around the central opening beneath the dome. Beside several pieces of marble statuary the gallery contains between 60 and 70 oil paintings. With this art gallery is deposited the Lee collection of American portraits in oil, loaned by the president emeritus, General G. W. Custis Lee. Most of these paintings hung at Mount Vernon, the home of George Washington, from whom General Robert E. Lee inherited them. In addition, there is in the Lee Memorial Chapel a series of oil paintings, for the most part of benefactors of the university.

SCIENCE. In connection with the laboratories of biology and geology there are study collections of minerals, rocks, and fossils, including the United States geological survey educational series of rocks, and the Batchen, Ruffner, and Brooks collections. The last includes four collections: (1) An extensive assortment of minerals, native and foreign, and specimens of many varieties of rock used for building and ornamental purposes. (2) A synoptic collection of fossil animals and plants. (3) A synoptic zoölogical collection of stuffed or dried animals and mounted skeletons. (4) A herbarium of 5000 mounted specimens; a collection of 700 sections of wood; a portfolio of American trees; numerous models of flowers; and a series of botanical charts.

The collections are in charge of the professors of related departments; the science collections being in charge of H. D. Campbell, professor of geology and biology.

NORFOLK:

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 3 acres, established in 1901, containing 6 reptiles, 133 birds, and 48 mammals.

RICHMOND:

DEPARTMENT OF AGRICULTURE AND IMMIGRATION. Museum.

This department maintains a museum in the capitol, comprising handsomely installed exhibits of the fruits, grains, etc., and the birds and animals of Virginia. The exhibit is open free to the public whenever the capitol is open and the attendance is 35,000–50,000 a year.

CONFEDERATE MEMORIAL LITERARY SOCIETY.

This society maintains a museum of Confederate war relics in the "White House of the Confederacy." A room in this building is maintained by each of the Confederate states in which are exhibited its war relics, in charge of a resident vice-regent. The formal opening of the building took place in 1896; the funds for restoration, fireproofing, and steam-heating having been raised by a memorial bazaar. The museum is open to the public on week-days from 9 to 5; admission is free on Saturdays but on other days a fee of 25 cents is charged.

R. E. LEE CAMP NO. 1 CONFEDERATE VETERANS.

The camp has a gallery containing about 87 oil portraits of prominent soldiers of the Confederacy, including nearly every officer of the army of northern Virginia and many officers of the army of Tennessee. The collection is in charge of the camp, W. S. Archer, commander, and J. Taylor Stratton, adjutant.

RICHMOND COLLEGE.

A series of casts of celebrated statuary, paintings, objects of ethnographical interest, etc., is installed in a hall affording about 4000 square feet of floor space. The collection is in charge of C. H. Ryland, curator, and is maintained from the general funds of the college. It is open to visitors as well as to the college.

THE VALENTINE MUSEUM. (11th and Clay Sts.)

Anthropology. The collections were made and presented by Granville G. Valentine, Benjamin B. Valentine, and Edward P. Valentine, and consist chiefly of surface finds (pipes, ceremonial stones, discoidal stones, arrow and spear heads, etc.), and objects from the mounds of Virginia and North Carolina. There is also a collection of

Irish implements of the stone age and one of modern Cherokee and other pottery.

ART. A collection of 1734 casts of Assyrian, Egyptian, Greek, Roman, renaissance and modern sculpture, was presented by Granville G. Valentine. There are also engravings, manuscripts, drawings, etc., and a large Brussels tapestry, The Sacrifice in the Temple, made by F. van den Hecke, early in the 17th century. This tapestry measures 15 x 20 feet and is said to be the largest ever brought to this country. There is also a similar smaller tapestry, Fortune distributing her Gifts.

HISTORICAL SKETCH. Established for the purpose of preserving and accumulating objects of archeology, anthropology, and other arts, and for publishing literary, historical, and scientific papers, according to the provisions made by will of the late Mann S. Valentine, of Richmond. The museum was incorporated in 1894 and opened to the public in 1898.

FINANCIAL SUPPORT. The donor provided an endowment fund of $50,000 for the maintenance of the museum. A small income is derived from life memberships, door receipts, and the sale of catalogs.

BUILDING. The collections are housed in the former residence of the donor of the museum, built in 1812 and having the original doors, silver knobs, locks, and hinges.

ADMINISTRATION. By a self-perpetuating board of trustees of 10 members.

LIBRARY. In 1898, at the opening of the museum, the collection of books contained 3300 volumes.

ATTENDANCE. Open to the public on week-days from 10 to 5. An admission fee of 25 cents is charged, except on Saturdays. In the past two years and a half there have been 12,000 visitors.

VIRGINIA HISTORICAL SOCIETY.

The society maintains a large gallery of portraits of Virginians and others; a small collection of historical relics; and a library containing also a valuable collection of manuscripts. W. G. Stanard, corresponding secretary.

VIRGINIA STATE LIBRARY. (State Capitol.)

The library has 8 pieces of sculpture; 50 prints and engravings; and 105 oil paintings, chiefly historical portraits.

WASHINGTON

PULLMAN:

STATE COLLEGE OF WASHINGTON.

The college maintains a museum on the third floor of the science hall, in charge of W. T. Shaw, curator. The general collection occupies a large central room, while the departmental collections are in three smaller rooms. The museum comprises an excellent collection of minerals from the United States, New South Wales, Germany, and Mexico; an almost complete collection of the ores of the state of Washington; plaster casts of prehistoric implements; a herbarium comprising 80,000± phanerogams and pteridophytes, 5000± bryophytes, 10,000± fungi, and 200± algae; the Misses Mary P. Olney collection of shells; a nearly complete collection of Puget Sound mollusks; a large series of fossil shells from Canada; 200 000± insects; an excellent set of echinoderms and other invertebrates; and a large number of mounted fishes, birds, and mammals. The collection of Alaskan birds is especially notable, consisting of about 110 species obtained by the curator during two trips through southern Alaska, the Yukon country, and the Bering Sea region, and including a specimen of the Fisher petrel (*Æstrelata fisheri*) which is the second known to science.

The college appropriates $750–1000 a year for the general maintenance of the museum. The collections are open free to the public on week-days from 9 to 4.

SEATTLE:

UNIVERSITY OF WASHINGTON. State Museum.

STAFF. Curator, F. S. Hall; 1 assistant and 1 janitor.

ANTHROPOLOGY. Ethnology, native, 26,000+, foreign, 600+. This department includes the Stewart collection of many thousand Indian implements, weapons, baskets, etc., collected along the lower Columbia River and purchased for the museum at the close of the Lewis and Clark Exposition; an extensive Philippine collection; and the Emmons collection of about 1800 articles illustrating the life and habits of the Tlingit people of southeastern Alaska.

BOTANY. Cryptogams, 1500 (10 types); Phanerogams, 10,000. There are also 400 jars of preserved fruits, nuts, vegetables, etc. of the state; 200+ economic grasses, seeds, etc., from Washington and Alaska; an exhibition series of 450+ mounted botanical specimens from Washington and Alaska; and an extensive forestry exhibit from Washington, Alaska, Hawaii, and the Philippines.

Commerce and Industry. Commercial material illustrating the lumber industry and timber products, fishing, clay products of the state, etc.

Education. Examples of primary school work, 1000+; of grammar school work, 4900+; of high school work, 800+; of college work, 350.

Geography. A large Alaska panorama, which is a composite of Alaskan scenery and is said to be the finest of the kind in the United States; 2 smaller cycloramas of scenes in the Yellowstone National Park; a small cyclorama of a hydraulic mining scene in Alaska; and about 20 paintings of Alaskan scenery.

Geology. Minerals, on exhibition, 3800, in storage, 40 tons; Rocks, on exhibition, 500+, in storage, 4 tons; Relief maps, models, etc., 20+; Clay products, building stones, etc., 500. This department includes the valuable Baker collection of 1000 minerals, and very complete sets of the rocks and minerals of Washington.

History. A small collection of material pertaining to American history, especially of the Northwest and Alaska.

Paleontology. Invertebrates, on exhibition, 5000, in storage, 10,000, types, 35; Vertebrates, on exhibition, 30; Plants, on exhibition, 200, in storage, 2000. This department includes the Henshaw collection of silurian fossils from the Ohio region, and a synoptic series of invertebrates from Ward. Among material not worked up is a series of marine invertebrates of western Washington, a complete collection of brackish-water invertebrates, and a collection of tertiary plants of western Washington.

Zoölogy. Shells, on exhibition, 2000, in storage, 12,000; Insects, on exhibition, 1000, in storage, 30,000, types, 100; Other invertebrates, on exhibition, 500, in storage, 10,000, types, 25; Fishes, on exhibition, 200, in storage, 1000; Batrachians, on exhibition, 12, in storage, 50+; Reptiles, on exhibition, 15+, in storage, 4000; Birds, on exhibition, 200, in storage, 800; Mammals, on exhibition, 25, in storage, 30+.

Historical Sketch. The nucleus of the museum is a small ethnological collection collected previous to 1880. To this was added in 1880 a series of fishes collected by Dr. Jordan. In 1883 this material was turned over to the Young Naturalist's Society which erected a building on the university campus and increased the museum. When the university moved to its present location other collections were secured and a curator appointed. In 1899 the state legislature created the State Museum and provided that it should be located at the university, and that it should be the repository for all articles and specimens of a scientific or historical character. A general reorganization of the museum is now in progress.

Financial Support. Optional appropriations from the general funds of the university.

Buildings. The State Museum was erected in 1909 at a cost of $39,000 for the use of the Alaska-Yukon-Pacific Exposition. After the exposition it was given to the university and will house the anthropological and geological departments of the museum. It affords 32,000 square feet of floor space for exhibition, and 4500 for offices, etc. The Forestry Museum was erected by the state in 1909 at a cost of $80,000, and affords 26,000 square feet of floor space for exhibition, and 1500 for offices, etc., for the forestry exhibit of the museum. This building also houses the school of forestry of the university.

Administration. By a curator, responsible to the president and regents of the University of Washington. The curator is assisted by an advisory museum committee.

Scope. Principally local and Alaskan collections. Increasing stress is laid upon university teaching, and plans for public instruction are under consideration.

Library. A library has been recently begun, and comprises about 150 volumes and over 100 pamphlets intended for the use of the museum staff.

WASHINGTON STATE ART ASSOCIATION. Museum of Arts and Sciences.

The Washington State Art Association was incorporated in 1906 for the founding and maintenance of schools of art and design, the formation and exhibition of collections of objects of art, and the extension of the arts and design by any appropriate means. The galleries of the association are temporarily in the Carnegie Library building. The executive officer of the board of trustees is George L. Berg, secretary-director; J. Louis Charbneau is museum curator.

Several hundred members have been enrolled, subscriptions to the building fund are progressing favorably, and plans for permanent organization and installation are being developed.

The collections now on hand are as follows: The Tozier collection of Indian relics, valued at more than $40,000; the Standley collection of ivories and curios, valued at $10,000; the Moses collection of fossil ivories, old silver, miniatures, and jewelry; a pair of perfectly matched mastodon tusks from Alaska, valued at $1000; plaster casts from the Boston Sculpture Company, valued at $1000; a valuable collection of old Roman pottery; fossil invertebrates from the Smithsonian Institution; the Oliver mineral collection; the Cantwell collection of American birds; a collection of Hopi pottery; and considerable other material now in storage.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 3 acres, established in 1901, containing 66 birds and 120 mammals.

SPOKANE

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 10 acres, established in 1906, containing 57 birds and 39 mammals.

TACOMA:

FERRY MUSEUM.

No reply has been received to repeated requests for information concerning this museum, which is said by Merrill to comprise 200 ethnological specimens, 250 minerals, 150 fossils, and 50 zoölogical specimens in addition to small art and miscellaneous collections.

TACOMA ACADEMY OF SCIENCE.

No reply has been received to repeated requests for information regarding the museum of this academy, which is said by Merrill to comprise 1000 ethnological and 500 geological specimens.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 10 acres, established in 1897, containing 3 reptiles, 75 birds, and 63 mammals.

WEST VIRGINIA

MORGANTOWN:

WEST VIRGINIA UNIVERSITY.

The secretary reports that the university does not maintain a museum. It is said by Merrill to have collections comprising 500 anthropological specimens, 3000 botanical specimens, 1300 minerals, 2000 fossils, and a working collection in zoölogy.

WISCONSIN

APPLETON:

LAWRENCE COLLEGE. David Walch Museum.

STAFF. There is no salaried staff, the professor of biology, W. J. Brinckley, acting as curator.

ANTHROPOLOGY. Uncivilized peoples: Archeology, native, 200, foreign, 50. Civilized peoples, ancient, 200, modern, 150.

ART. Sculpture, Thorwaldsen's "Eve" and an Egyptian piece.

BOTANY. Cryptogams, 1200; Phanerogams, 1800; Economic collections, 50.

GEOLOGY. Minerals, on exhibition, 960, in storage, 1000; Rocks, 200. The collection of lead, zinc, iron, and copper specimens is particularly good. The collection includes a duplicate set of the material gathered by the state geological survey of 1879 and some succeeding years.

PALEONTOLOGY. Invertebrates, 600; Plants, 150.

ZOÖLOGY. Shells, on exhibition, 9560, in storage, 3000±; Insects, 300; Other invertebrates, 300; Fishes, 20; Batrachians, 3; Reptiles, 30; Birds, 250; Mammals, 30.

FINANCIAL SUPPORT. Variable appropriations by the board of trustees of Lawrence College.

BUILDING. The museum occupies 3720 square feet of floor space for exhibition, and 800 for offices and workrooms, on the fourth floor of the Stephenson Science Hall.

SCOPE. College teaching and public instruction.

LIBRARY. 500 volumes intended for the use of both staff and public.

PUBLICATIONS. A catalog is in preparation.

ATTENDANCE. Free to the public on Thursdays during the school year.

ASHLAND:

ASHLAND PUBLIC SCHOOLS.

The school board maintains a museum of natural history and articles of local historical interest, occupying about 768 square feet of floor space in the high school building. The museum is used for school work and for instruction of the general public. It is open free to the public on week-days from 8 to 6.

BARABOO:

SAUK COUNTY HISTORICAL SOCIETY.

The society was incorporated in 1905 for the purpose of studying and collecting material relating to the history of Sauk County. Special attention has been given to the archeology of the county, and the collection now comprises 1000± specimens. The historical collections include 500± specimens in addition to a small collection of G. A. R. relics. There are also specimens of local stalactites and trilobites and 110 polished Unios. There is a library of 10 volumes relating to local history.

The society receives an annual appropriation of $200 from the county, in addition to the fees of members, which are 50 cents annually. The museum is administered by an executive committee and is free to the public. No statistics of attendance are kept.

The society has published a sketch of Abe Wood, first permanent settler of Baraboo, by H. E. Cole.

BELOIT:

BELOIT COLLEGE. Museums.

ANTHROPOLOGY. Logan Museum of Archeology. This museum is in charge of Mr. George L. Collie and 3 student assistants. It derives its name from Mr. F. G. Logan who presented the Rust collection of material from Southern California and Arizona, the Perkins, Ellsworth, and Elkey collections of material chiefly from Wisconsin, and who also provided an endowment yielding an annual income of $700. The collection includes 6725 specimens of native archeology and 490 of foreign archeology. It is especially rich in copper and stone artifacts from Wisconsin. The Rust collection includes pueblo pottery, mortars, pestles, steatite bowls, etc. There are 180 ethnological specimens from the Dakota and Winnebago tribes. There is a good collection of Pomo baskets, and a representative series of artifacts from Scandinavia, France, and Japan. The Logan Museum is housed in Memorial Hall, erected in 1869 by the college at a cost of $22,000 and providing 4500 square feet of floor space for exhibition, and 600 for storage. The museum is administered by a curator, responsible to the board of trustees of Beloit College. It is open free to the public daily from 3 to 5 and 7 to 9.

ART. The art museum includes 400 casts of antique and modern sculpture; 16,000 prints, engravings, and photographs; 75 oil paintings; 25 water colors and pastels; and quite a large collection of ceramics. The collection of Greek casts from the anthropological building at the Columbian Exposition is especially noteworthy. There is an art library of 2000 volumes, including valuable files of art journals. The museum is installed in Art Hall, erected by the college at a cost of $5000 and providing 4500 square feet of exhibition space. It is in charge of Mrs. Helen B. Emerson, curator, and one assistant. The collection is maintained by the income from the Eldridge fund of $10,000.

BOTANY. The Ellis and Everhard collection of Peronosporaceae of the United States; 500 species of flowering plants of Wisconsin.

GEOLOGY. Minerals, 650 specimens, particularly rich in quartz and calcite, mainly from Wisconsin; Rocks, 1200, including the Krantz series illustrating Rosenbusch's Manual; that by Sturtz illustrating typical massive rocks; one by Kuntze illustrating typical American localities; and 500 specimens illustrating the principle ores of Canada and the United States; dynamic geology, relief maps, topographic maps, folios, models, etc., 450.

PALEONTOLOGY. 1200 invertebrate, 50 vertebrate, and 15 plant fossils. This collection is especially rich in fossils of the Trenton group obtained from a fine exposure at Beloit. The collection contains many type specimens from this locality.

ZOÖLOGY. The Willard collection of 1000 specimens representing the birds, and to a less extent, the mammals of Wisconsin; 200 species of bird eggs; and a large collection of shells now well labeled.

OTHER COLLECTIONS. There is also a large collection of postage stamps.

The collections in botany, geology, paleontology and zoölogy are housed in the corresponding departments in Science Hall, which was erected by the college at a cost of $82,000.

DARLINGTON:

LAFAYETTE COUNTY HISTORICAL SOCIETY.

This society has a collection including over 500 Indian implements, etc., war relics, antique furniture, portraits of old settlers, and other articles of historical interest. There is also a library of nearly 400 volumes on historical subjects. The society was organized in January, 1909, when it received an appropriation of $500 from the county. The collection is exhibited in the court house, and is maintained by membership fees. It is open free to the public on week-days from 8 to 6.

GREEN BAY:

KELLOGG PUBLIC LIBRARY.

The library maintains a small museum collection which is intended to be installed in a basement room set apart for the purpose, as soon as the necessary funds are available for cases, etc. The collection includes a small but choice series of Indian relics, chiefly local, and an art collection comprising 24 prints and engravings, 22 oil paintings, and 26 oriental rugs; also a very handsome Dutch marquetry cabinet of the 17th century. In geology there is a collection of agates. The exhibit is in charge of Deborah B. Martin, librarian.

MADISON:

STATE HISTORICAL MUSEUM OF WISCONSIN.

STAFF. Chief, Charles E. Brown.

ANTHROPOLOGY. Uncivilized peoples: Archeology, native, 10,000±, foreign, 800±; Ethnology, native, 2500±, foreign, 1500±. Civilized peoples, ancient, 500±, modern, 3000±. There are models of a pueblo and of a cliff dwelling, and the exhibition of ethnological groups is contemplated.

ART. Reproductions of Greek art; a valuable collection of prints and engravings; a large collection of oil paintings; a small collection of water colors; the Mrs. Charles Kendall Adams collection of ceramics; and a collection of Brussels, Italian, and other laces. Special collections include etched engravings of architectural ruins in Rome and Tivoli by Giovanni Battista Piranesi; Arundel society reproductions in color of European frescos; Medici reproductions; Japanese color prints; antique chairs, tables, chests, stands, bronzes, etc.; and old-fashioned musical instruments.

HISTORY. Reproduction of a New England colonial kitchen; a collection illustrating the period of the French, British, and American fur trade; a collection illustrating steamboating days on the upper Mississippi; a collection illustrating the military history of the state and nation, and including the war flags of the Wisconsin Civil and Spanish war regiments; relics of Wisconsin territorial days; and a collection of American and foreign coins, bank notes, medals, and medallions. Other collections are being developed.

HISTORICAL SKETCH. The first organization of the society (1849–53) maintained a small library, housed in a glass case on a table in the governor's office, but no museum. After a reorganization in 1854, portraits, specimens, and relics began slowly to come in and were designated as the cabinet and gallery in distinction from the library. In 1884 the society occupied quarters in the capitol and after 1886 the term museum was applied to the collection. In August, 1900, the society removed to the present state historical library building, the entire upper floor of which is devoted to museum purposes. The museum has been fully organized as a department of the society with its own chief, only since 1908.

Financial Support. The society is now asking from the state an annual appropriation of $3500 for the maintenance of the museum and the prosecution of historical and anthropological research.

Building. Since 1900 the museum has occupied the entire upper floor of the state historical library building, including two large and six smaller halls, with adjoining office, storerooms, photographer's darkroom, carpenter shop, etc. Additional exhibition halls and a laboratory are needed.

Administration. By a chief, responsible to the State Historical Society of Wisconsin.

Scope. The chief aim of the museum is popular education in anthropology, history, and art, with exploration and research in these subjects, especially in Wisconsin. Lectures are given in the museum to schools, University of Wisconsin classes, women's clubs, and the general public, by the chief, university professors, and others. Special exhibits illustrating anthropological and historical subjects are made from time to time. The Madison Art Association holds a number of special exhibits and lectures in the museum halls each year. The Wisconsin Archeological Society, the Wisconsin branch of the National Association of Audubon Societies, and the Wisconsin Academy of Sciences, Arts, and Letters each occupy an office in the museum. The Museum Club holds meetings in the museum.

Publications. Reports are made in the annual Proceedings of the State Historical Society and handbooks, catalogs, and circulars are issued by the museum.

Attendance. The museum is open free to the public on weekdays from 9 to 5, and occasionally on Sunday afternoons. The number of visitors is from 60,000 to 80,000 a year.

UNIVERSITY OF WISCONSIN.

The university maintains no formal museum but has extensive teaching collections in connection with its science departments. The more important features of these collections are as follows: The type fossils described in the volumes of the first geological survey of Wisconsin, deposited by the Wisconsin Academy; over 34,000 minerals; 27,000 rocks; a herbarium of 10,000 sheets of phanerogams and vascular cryptogams from outside the state, 4000 sheets from within the state, and 7000 labeled specimens of Musci.

MILTON:

MILTON COLLEGE.

The college maintains teaching collections under the charge of A. R. Crandall, professor of biology, with special stress upon local collections.

MILWAUKEE:

LAYTON ART GALLERY.

The Layton Art Gallery was built by Mr. Frederick Layton at a cost of $115,000, and given an endowment of $100,000 the gallery being incorporated in 1888 for the purpose of maintaining a public art gallery. The collections include 10 pieces of sculpture and 183 paintings. There is a limited reference library for the use of both staff and public. Plain and illustrated catalogs have been published. The gallery is open free to the public three and one-half days a week; on two days an admission fee of 25 cents is charged. The number of visitors averages 30,000 a year. The museum is in charge of George Raab, curator, and Elizabeth Hillman, assistant.

PUBLIC MUSEUM OF THE CITY OF MILWAUKEE.

STAFF. Director, Henry L. Ward; Curators, Samuel A. Barrett (anthropology), Sigmund Graenicher (invertebrate zoölogy), Carl Thal (books); Lecturer, Alfred C. Burrell; Guide-lecturer, Anton C. Katze-Miller; Chief taxidermist, George Shrosbree; Modeler, Herbert Clowes; Assistants, Hall C. Rhode (taxidermy), Richard Muttkowski (invertebrate zoölogy); Clerk, William B. Brickner; 1 janitor, 3 guards, 1 messenger, 3 cleaning women, 2 engineers, and 4 firemen.

ANTHROPOLOGY. Uncivilized peoples: Archeology, native, 19,200±, foreign, 2890±; Ethnology, native, 3300±, foreign, 2600±. Civilized peoples, ancient, 640±, modern, 8975±. A collection of 962 Indian copper implements, mostly from Wisconsin, is considered one of the most important of its kind in the country. The collections of firearms, and of boots and shoes of all nations also rank high. One life-size ethnological group is on exhibition, one in storage, and others in preparation. This department includes much historical material and is now reorganizing for greatly increased activities, made possible by the recent passage of a law in the state legislature which levies a special tax of $\frac{1}{5}$ of a mill and thus gives this department an income independent of that which supports the other departments of the museum. This income is now being used for the erection of an addition to the building to provide space for this department.

BOTANY. Cryptogams, 2330; Phanerogams, 26,083. There is a fairly complete collection of mushrooms of the Milwaukee region. The phanerogamic herbaria consist of a Wisconsin collection and a general systematic collection. There is a small collection of plant fibers.

EDUCATIONAL COLLECTIONS. The museum has for loan to the schools, 10 collections of mounted lepidoptera, each containing 20 specimens; 61 mounted mammals; 696 mounted birds; 47 collections of minerals and rocks, each containing 40 specimens; 7 archeological collections, each containing 22 specimens. There are 1885 lantern slides for lectures delivered at the museum to school children.

GEOLOGY. Minerals, on exhibition, 5324±, in storage, 2674±; Rocks, on exhibition, 450±, in storage, 50±; Dynamic geology, relief maps, models, etc., 181. The collections are strong in coppers and associated minerals, and there is a fair representative collection of the iron ores of the Michigan-Wisconsin region and a fair synoptic collection of meteorites. There is on deposit a very fine collection of coppers and associated minerals from the Lake Superior region.

PALEONTOLOGY. Invertebrates, on exhibition, 12,639±, in storage, 1710±, types and figured specimens, 28; Vertebrates, on exhibition, 811, in storage, 35±, types and figured specimens, 1; Plants, on exhibition, 244, in storage, 25±, types and figured specimens, 2. The collection includes a skeleton of *Mastodon*, skulls of *Titanotherium*, etc., casts of skeletons and restorations of *Megatherium*, *Glyptodon*, *Plesiosaurus*, *Ichthyosaurus*, etc.

ZOÖLOGY. Shells, on exhibition, 20,000±, in storage, 81,539±; Insects, on exhibition, 777, in storage, 73,428, types and figured specimens, 181; Other invertebrates, on exhibition, 1100±, in storage, 1155±; Fishes, on exhibition, 300, in storage, 509; Batrachians, on exhibition, 46, in storage, 170±; Reptiles, on exhibition, 185, in storage, 962±; Birds, on exhibition, 3292, in storage, 6311; Mammals, on exhibition, 523, in storage, 1449. Other collections include preparations and series illustrating developmental stages, evolution by environment, artificial selection, protective coloration and form, mimicry, and individual variation; enlarged models of insects; examples of insect architecture; and a collection of Wisconsin pearls. Special attention has been given to insects, birds, and mammals. There are 8 large and 30 small groups of mammals, and 7 large and 55 small groups of birds exhibited in natural surroundings.

HISTORICAL SKETCH. The museum had its beginning in 1882 in the acceptance by the city as a gift "in trust to be kept, supported and maintained by said city, as a free museum for the benefit and use of all citizens of said city" of the collections of the Wisconsin Natural History Society. The formation of these collections was begun in or about 1857 by the Naturhistorischer Verein von Wisconsin, which was the earlier name of the natural history society. At the time of the transfer of these collections to the city they consisted of approximately 19,120 specimens and 270 books, maps, and charts. In 1883 purchase was made by subscription of a collection of about equal importance from Ward's Natural Science Establishment. These two collections were united and in May, 1884, the museum was thrown open to the public in rented quarters in the exposition building. In 1890 the site of the present building was purchased by the city and in 1896 the erection of the building for the accommodation of the museum and the public library was begun. The museum was moved to this building in July, 1898. In September, 1906, the Common Council resolved on the establishment of a historical museum as a department of the public museum. To accommodate this an addition, covering approximately 19,000 square feet of ground and consisting of 4 stories and basement, was built in 1909.

FINANCIAL SUPPORT. The museum receives a special tax of $\frac{1}{7}$ of a mill on each dollar of the assessed valuation of all taxable property in Milwaukee. The historical department receives a separate tax of $\frac{1}{5}$ of a mill. Milwaukee has a population of 370,000, and an assessed value of $232,227,790. The income from this source for 1909 amounted to $79,620.95. The city school board contributes $2500 a year for lectures to the school children. The only other source of income is occasional gifts for specific purposes.

BUILDING. Erected in 1898 by the city at a cost of $150,000 for the site and $628,301 for building and furnishings. It accommodates both the public museum and the public library; the museum occupying 55 per cent of the building, with 39,600 square feet of floor space for exhibition, and 7600 for offices, workrooms, etc. The addition of 1909 cost $300,000 and affords 51,120 square feet of exhibition room, 19,231 for offices, workrooms and storage, and 11,322 for lecture hall and smaller meeting rooms.

ADMINISTRATION. By a board of trustees of which the director is the executive officer and ex-officio secretary. The board consists of nine members, viz: four citizens and three aldermen, appointed by the mayor, and the president of the board of school directors and the superintendent of schools ex-officio. All appointments to the staff are made by the board of trustees on recommendation of the director.

Scope. The primary purpose of the museum is the instruction of the general public. In this connection much is being done by a system of illustrated school lectures, of which there are three each day given by a special lecturer to classes from the public schools of the city. Each such lecture is followed with instruction by a special guide-lecturer in the exhibition halls. In this manner 27,364 scholars and teachers heard lectures and were shown exhibits pertaining to the subjects of the lectures during 1909. The school loan collections are extensively used also, there being during 1909, 1066 loans to schools. The scientific staff carries on explorations and research, special attention being given to Wisconsin. Its activities in the field not only give opportunity for systematic research but enable the museum to greatly increase its collections in the most systematic and connected manner. The most extended investigations thus far carried on have been those in entomology. The staff is also called upon frequently to identify specimens for the public and for other museums.

Library. The library consists of 15,204 books, pamphlets, and maps, relating to natural history and anthropology, intended for use of the staff primarily, but also open to the public.

Publications. (1) Annual Reports; 27 issued. (2) Bulletin of the Public Museum: this series is published at irregular intervals beginning in 1910. (3) Bulletin of the Wisconsin Natural History Society: the museum purchases a part of the issue of this publication for distribution to its exchanges; 7 volumes of the new series have been issued.

Attendance. Open free to the public from 9 to 5.30, except Sundays, Thanksgiving, Christmas, and New Years, when the hours are 1.30 to 5. Attendance for 1909, 514,866.

ZOÖLOGICAL PARK.

The city maintains a zoölogical park of 10 acres, established in 1903, containing 2 reptiles, 103 birds, and 113 mammals.

RACINE:

RACINE PUBLIC LIBRARY.

The library contains two collections of natural history specimens as follows: the Blake collection of minerals, butterflies, birds, and mammals; and the Dr. Hoy collection of about 600 birds and 100 bird nests found within a radius of 10 miles of Racine. These collections are the property of the city but are in the care of the public library, where they occupy a room on the second floor and are open to the public on Wednesdays and Saturdays. Visitors from out-of-town are admitted at any time. The museum is used by teachers and school children for educational purposes.

RIPON:

RIPON COLLEGE.

The college maintains teaching collections in connection with its departments of classics, biology, and geology.

The archeological collection includes 250 Roman coins of the most important reigns of the empire; 50 terra cotta lamps illustrating all the types; Etruscan, Greek, and Roman vases dating from 750 to about 300 B. C.; bronze fibulae, keys, letter stamps, bone stili, spoons, dice, etc.; several fine specimens of glass from Greece and Italy; inscribed amphora handles and numerous other articles connected with the daily life of the ancient Romans; and several thousand carefully selected photographs and slides, illustrating Greek and Roman history, geography, and art.

The mineral collection comprises about 2000 specimens, including the Barber collection; the New Orleans collection, from the New Orleans Exposition; the Armstrong collection; and the educational series of rocks distributed by the United States geological survey.

The biological collections include a synoptic series of invertebrate and vertebrate animals, and the Congdon collection of bird eggs, obtained chiefly in Wisconsin and Canada.

These collections are open free to the public whenever the college is in session.

ST. FRANCIS:

ST. FRANCIS SEMINARY. Salzmann Museum.

The Salzmann Museum is the property of St. Francis Seminary, and is in charge of the professor of natural sciences, Rev. William Metzdorf. The primary purpose of the museum is college teaching, and the collections include 5000 Indian relics; 75 skulls; 800 coins, including 200 old Roman coins; 1500 specimens in botany; 2000 minerals, including especially fine agates and gold ores; 200 fossils; and a zoölogical collection comprising 500 shells, 15,000 insects, 50 other invertebrates, 5 fishes, 2 batrachians, 12 reptiles, 250 birds with 250 eggs and 25 nests, and 35 mammals. The museum is visited by about 1000 persons annually, exclusive of students.

WYOMING

LARAMIE:

UNIVERSITY OF WYOMING. Museum.

STAFF. Curator, W. H. Reed, who is also instructor in geology; Curator of the herbarium, Aven Nelson; Student assistants, S. Howland Knight, Eugene Willson.

BOTANY. Cryptogams, 5000; Phanerogams, 60,000, including about 400 types and figured specimens.

GEOLOGY. Minerals, on exhibition, 3000, in storage, 5000; Rocks, in storage, 800; Relief maps, models, etc., 2; Economic collections, a special exhibit of oils, mostly native to the state.

PALEONTOLOGY. Invertebrates, on exhibition, 3000, in storage, 1000; Vertebrates, on exhibition, 12,000, in storage, 1000, types and figured specimens, 17; Plants, on exhibition, 300, types and figured specimens, 23. Important exhibits include an eocene camel, several skulls of *Titanotherium* and many limbs and parts of dinosaurs. Of the latter, a seventy foot specimen, described by Marsh as *Morosaurus grandis*, is now being mounted. Since 1895 special attention has been paid to the collection of mesozoic reptiles, field work having been carried on during every succeeding summer, and the dinosaur collection is now one of the largest in America. Among mesozoic reptiles represented in the collection are *Morosaurus*, *Brontosaurus*, *Diplodocus*, *Ceratosaurus*, *Aleosaurus*, *Laosaurus*, *Camptosaurus*, *Claosaurus*, and types of *Ceratodus americanus* and *robustus*, *Megalneusaurus rex* (type genus and species), *Cimoliosaurus laramiensis*, and *Plesiosaurus shirleyensis*. Among other type material is *Cycadella*, a new genus of fossil cycad with 21 species.

ZOÖLOGY. Shells, 4000; Insects, 5700; Fishes, 650; Batrachians, 16; Reptiles, 100; Birds, 780 skins representing the avian fauna of Wyoming; Mammals, 42.

HISTORICAL SKETCH. The museum originated in 1888 and has specialized in mesozoic reptiles since 1895.

FINANCIAL SUPPORT. By an optional appropriation from the state legislature through the university.

BUILDING. Erected in 1900 at a cost of $40,000, appropriated by the state. Floor space available for exhibition, 3200 square feet;

for offices, workrooms, etc., 768. The building is four stories in height, the two lower floors only being used for the museum.

ADMINISTRATION. By a curator, responsible to the president of the university.

SCOPE. Exploration, research by the staff, and university teaching.

LIBRARY. 150 volumes of reference works intended for use of the staff.

ATTENDANCE. About 1000 per year.

CANADA

ALBERTA

BANFF:

ROCKY MOUNTAINS PARK MUSEUM.

Collections. Local herbaria comprising 82 cryptogams and 719 phanerogams; local geological, geographical, and topographical maps; 182 minerals and 125 rocks; about 75 fossils; 4000 insects, 418 birds, 37 mammals, and a few other zoölogical specimens; and ethnological material from local Indian tribes.

This museum was begun in 1895 with a small collection of minerals, plants, birds, and mammals, in a small wooden building of bungalow style. In a few years the collections were removed to a combined museum and government office building where they have increased rapidly in extent. The space occupied for exhibition is 3128 square feet, and for offices and workrooms, 491. The museum is in charge of N. B. Sanson, curator, and is supported by grants from the dominion government which vary in amount. The collections are confined almost exclusively to local material. There is a small working library. The report of the curator is included in that of the commissioner of parks. The museum is open free to the public and the attendance for 1908 was over 9000.

BRITISH COLUMBIA

VANCOUVER:

ART, HISTORICAL, AND SCIENTIFIC ASSOCIATION.

This association was organized in 1894 and undertook the formation of a museum and library devoted to the natural history of Canada and especially of British Columbia. There are also small collections in fine arts and in local history. The museum is supported by a grant of $1000 annually from the city council, supplemented by membership fees of the association, and is in charge of H. J. de Forest, secretary and curator.

VICTORIA:

PROVINCIAL MUSEUM.

Staff. Curator, Francis Kermode; Assistant curator, Ernest M. Anderson; Assistant, Walter Behnsen; 1 janitor and attendant.

ANTHROPOLOGY. About 2500 objects illustrating the life and customs of the native tribes of British Columbia.

BOTANY. About 1000 marine algae and 2100 other botanical specimens.

PALEONTOLOGY. A series of about 3500 fossils.

ZOÖLOGY. Shells, 5000; Insects, 3000; Other invertebrates, 245; Fishes, 300; Reptiles, 50; Birds, 2500; Mammals, 400; Bird eggs, 1200; Osteological preparations, 150.

HISTORICAL SKETCH. The museum was organized in 1886, primarily for the preservation of local ethnological material, and has gradually developed into a general museum.

FINANCIAL SUPPORT. An annual grant of about $5500 is made by the legislature of British Columbia for salaries and miscellaneous expenses.

BUILDING. The building is of stone and affords about 18,000 square feet of floor space for exhibition, in addition to workshops, storerooms, etc., in the basement.

LIBRARY. About 450 bound books and over 2000 pamphlets related to the work of the museum.

PUBLICATIONS. Catalogs of local fauna and of museum collections, six having been published since 1891.

ATTENDANCE. Open free to the public on week-days from 9 to 5 and on Sundays, from May to September inclusive, from 1 to 5. In 1909 the number of visitors who signed the register was 34,640; this is estimated to represent about one-third of the attendance.

NEW BRUNSWICK

CHATHAM:

MIRAMICHI NATURAL HISTORY ASSOCIATION. Museum.

STAFF. Curators, J. D. B. F. Mackenzie, A. Adams, W. M. Robertson, P. Cox.

ANTHROPOLOGY. A collection of native spears and arrowheads; textiles of Indian manufacture; musical instruments from West Africa; kyack from Lapland; native carvings from Mexico, Java, and South America; boomerangs, fish spears, and war spears from Australia; bows, arrows, and spears from the New Hebrides; etc.

ASTRONOMY. A three-inch telescope used in occasional lectures and classes.

BOTANY. Cryptogams, 200; Phanerogams, 300.

COMMERCE AND INDUSTRY. Cottons in various stages of manufacture.

GEOLOGY. 200 minerals, and a few rocks, geological maps, etc.

HISTORY. Relics of the early French occupation.

PALEONTOLOGY. A few invertebrate, vertebrate, and plant fossils.

ZOÖLOGY. Shells, 200; Insects, 1000; Other invertebrates, 100; Fishes, 200; Batrachians, 50; Reptiles, 50; Birds, 100; Mammals, 50. The insect collections include life-history groups of destructive insects.

HISTORICAL SKETCH. The association was organized in 1897 for the purpose of collecting natural history material in the four northern counties of New Brunswick, and providing lectures and instruction for the general public and for school children and teachers.

FINANCIAL SUPPORT. Fixed annual appropriations of $200 from the province and $50 from the county, supplemented by membership dues.

BUILDING. The collections occupy 400 square feet of floor space for exhibition, and 200 for offices and workrooms, in a building erected by subscription in 1908 at a cost of $2300.

LIBRARY. About 300 volumes on natural science intended for the use of both staff and public.

PUBLICATIONS. The association issues Proceedings of which 5 have been issued to 1910.

ATTENDANCE. Open free to the public on Tuesday evenings from January 1 to June 1.

FREDERICTON:

BOARDMAN COLLECTION. (Parliament Building.)

This collection was made by the late George A. Boardman and was the basis of "A catalog of the birds found in the vicinity of Calais, Maine, and about the islands of the Bay of Fundy" published by the Boston Society of Natural History in 1862. The collection also includes skins and mounted specimens of foreign birds, a series of Maine and New Brunswick bird eggs, a few casts of local fishes, etc.

CROWN LANDS DEPARTMENT. (Parliament Building.)

This department maintains a collection of the birds and larger mammals of New Brunswick.

UNIVERSITY OF NEW BRUNSWICK.

The university maintains collections, primarily for teaching purposes, in charge of Philip Cox, curator.

ARCHEOLOGY. Prehistoric implements of New Brunswick Indians.

BOTANY. A number of herbaria of North American and local phanerogams and cryptogams.

Geology. A general collection of rocks and minerals, with a special series of economic minerals from New Brunswick.

Paleontology. In addition to a general series of fossils, there are special collections representing all the celebrated localities in New Brunswick and Nova Scotia.

Zoölogy. Collections of marine invertebrates from the United States Fish Commission, the Museum of Comparative Zoölogy, and the United States National Museum; a conchological collection; about 200 cataloged fishes from the United States Fish Commission; a series of reptiles from the Boston Society of Natural History; a collection of birds and bird eggs; and a small number of mounted mammals.

ST. JOHN:

NATURAL HISTORY SOCIETY OF NEW BRUNSWICK. Museum.

Staff. Curator, William McIntosh; Assistant, F. A. Hoyt.

Anthropology. Uncivilized peoples: Archeology, native, 1734, foreign, 240; Ethnology, native, 196, foreign, 225. Civilized peoples, ancient, 175, modern, 149. A series of dwelling group models, one twenty-fourth natural size, to illustrate Indian, French, and Colonial periods of New Brunswick history, is in preparation. One of these representing a summer dwelling of Malecite Indians, has been completed.

Botany. Cryptogamic and phanerogamic herbaria, 8960. There is also a collection of New Brunswick woods, including cross and longitudinal sections, photograph of the tree, map of distribution, and descriptive labels.

Geology. Minerals, on exhibition, 635, in storage, 5420; Rocks, on exhibition, 254, in storage, 780. Special collections include ores of the more common metals, economic minerals, local collections, and the collection of the first Canadian government survey made by Dr. Abraham Gesner.

Paleontology. Invertebrate, vertebrate, and plant fossils, on exhibition, 532, study collection, 3441, in storage, 4252, types and figured specimens, 100+ (chiefly insects and trilobites).

Zoölogy. Shells, on exhibition, 1435, in storage, 5000±; Insects, on exhibition, 1248, in storage, 15,000±; Other invertebrates, on exhibition, 300±, in storage, 100± ; Fishes, 78; Batrachians, 38; Reptiles, 61; Birds, on exhibition, 327, in storage, 154; Mammals, 52.

Historical Sketch. The Natural History Society of New Brunswick was organized in 1862 and received as the nucleus of its museum the collections of the Stienhammer Geological Club. After developing general collections the society underwent a period of depression from which it emerged in 1881 to renewed activity. The Gesner collection was purchased in 1889. This was the oldest museum in New Brunswick and was opened to the public April 5, 1842. Its purchase by the Natural History Society was an important addition to the museum, which has since shown steady growth. In 1906 the society purchased its present building.

FINANCIAL SUPPORT. From the general funds of the Natural History Society, supplemented by appropriations of $400 annually from the province, and $200 annually from the city. In 1910 the society received a small bequest, the amount of which is not yet known.

BUILDING. Erected in 1878 at a cost of $45,000, but purchased in 1906 by the Natural History Society for $7000. The number of square feet of floor space available for exhibition is 8375, for offices, workrooms, etc., 4450.

ADMINISTRATION. By a curator, responsible to the council of the Natural History Society.

SCOPE. Primarily the maintenance of local collections and instruction of the general public, supplemented by research and public school work.

LIBRARY. 11,445 volumes on natural science, intended for the use of staff and members.

PUBLICATIONS. Bulletin of the Natural History Society of New Brunswick, 6 volumes issued from 1882–1909.

ATTENDANCE. Open free to the public on week-days, except holidays, from 2 to 5.30, and on Thursday evenings in winter.

NEWFOUNDLAND

ST. JOHN'S:

GEOLOGICAL SURVEY.

The survey maintains museum collections concerning which no information has been received, but which are said by Merrill to comprise material illustrating the archeology and ethnology of the Indians of Newfoundland; historical and industrial exhibits; 365 herbarium specimens of plants; 500 minerals; a collection of rocks; and a zoölogical collection comprising 250 native and 500 foreign shells, a few native and many foreign insects, 50 native and 502 foreign fishes, 150 native and 165 foreign birds, and 30 native and 12 Australian mammals.

NOVA SCOTIA

HALIFAX:

DALHOUSIE COLLEGE. Museum.

STAFF. Curator, D. S. McIntosh.

ANTHROPOLOGY. 250 specimens illustrating the stone age in North America, and 38 specimens of foreign archeology.

BOTANY. Cryptogams, 300±; Phanerogams, 128.

GEOLOGY. Minerals, on exhibition, 150±, in storage, 300±. There is also a series of Nova Scotia rocks and iron ores.

PALEONTOLOGY. Invertebrates, 1600±; Vertebrates, 10; Plants, 100. These collections are at present in storage.

ZOÖLOGY. Shells, 20; Insects, 7; Other invertebrates, 20; Fishes, 10; Batrachians, 10; Reptiles, 5; Birds, 193; Mammals, 18. These collections are at present in storage. The most notable specimens are a pair of Labrador ducks.

This museum consists chiefly of the McCulloch, Patterson, and Honeyman collections, and is used for college teaching. It is housed in the college building and is supported by a small endowment, supplemented by special grants from the college. The curator is responsible to the senate of the college.

PROVINCIAL MUSEUM.

STAFF. Curator, Harry Piers; 1 messenger.

ANTHROPOLOGY. Uncivilized peoples: Archeology, native, 886; Ethnology, native, 30, foreign, 1000±. Civilized peoples, ancient, 70.

ART. Sculpture, 10; Prints and engravings, 6; Oil paintings, 7; Water colors and chalk, 9; Ceramics, 118.

BOTANY. Plants, Nova Scotia, 2931, foreign, 1272. The local collections also include 99 water-color paintings of wild flowers, 54 fruits, 62 specimens of wood and 55 of grain, with a reference collection of 100 economic seeds of Canada.

COMMERCE AND INDUSTRY. 150 specimens illustrating local manufacturing processes.

GEOLOGY. Minerals, Nova Scotia, 3453, foreign, 1936; Rocks, Nova Scotia, 1850, foreign, 477. Material of special interest includes the type specimen of Louisite; a good collection of zeolites, etc., from the trap of the Bay of Fundy; and economic minerals of Nova Scotia.

HISTORY. Miscellaneous historical relics, Nova Scotia, 125, foreign, 144.

PALEONTOLOGY. Invertebrates, Nova Scotia, 237, foreign, 493, types and figured specimens, 9; Vertebrates, Nova Scotia, 37, foreign, 60, types and figured specimens, 4; Plants, Nova Scotia, 507, foreign, 6.

ZOÖLOGY. Shells, Nova Scotia, 200, foreign, 925; Insects, Nova Scotia, 1626, foreign, 90; Other invertebrates, Nova Scotia, 300, foreign, 250, types, 1 (*Sthenoteuthis megaptera*); Fishes, Nova Scotia, 260, foreign, 50, figured, 2; Batrachians, Nova Scotia, 50, foreign, 15; Reptiles, Nova Scotia, 25, foreign, 50; Birds, Nova Scotia, 403, foreign, 50, figured, 5; Mammals, Nova Scotia, 180, foreign, 24. Material of special interest includes a specimen of *Ceratias holbölli* Kroyer, a very rare deep-sea fish of which only four specimens are known.

OTHER DEPARTMENTS. Naval architecture, 8; Numismatics, Nova Scotia, 101, foreign, 1305.

HISTORICAL SKETCH. The founding of the museum was first proposed in 1862 but was not actually accomplished until 1868, when a room was set apart for this purpose in the government building. The collections of the defunct Mechanics Institute formed the nucleus of the museum, to which was added material purchased from Nova Scotia exhibitors at the Paris exhibition. In 1899 the museum was removed to a new building and the Provincial Science Library was organized and placed in charge of the curator of the museum. In 1909 the museum and library were removed to the new building of the Nova Scotia Technical College, where they occupy the entire western wing.

FINANCIAL SUPPORT. A fixed yearly grant of $2600 from the Nova Scotia government.

BUILDING. The museum occupies 2856 square feet of floor space for exhibition, 158 for office and workroom, 1920 for library stackroom, and 176 for reading room, in the government's technical college, which was erected in 1908–9 at a total cost of $150,000.

ADMINISTRATION. By a curator, responsible to the department of public works and mines of Nova Scotia.

SCOPE. Exploration, research, college teaching, instruction of the general public, maintenance of local collections, preparation of mineral exhibits for local and foreign exhibitions, and the furnishing of information on the resources of Nova Scotia.

LIBRARY. 36,784 books and pamphlets on pure and applied science, intended for the use of both staff and public.

PUBLICATIONS. Three administrative reports and a number of descriptive catalogs have been published by the museum. Papers relating to the museum have also been published in other journals.

ATTENDANCE. Open free to the public.

NEW GLASGOW:

HIGH SCHOOL.

The principal reports that the school maintains a small museum.

TRURO:

COUNTY ACADEMY.

The principal reports that the academy maintains a museum of natural history, but has not replied to repeated requests for further information.

NORMAL COLLEGE.

The school has developed a series of museum collections, largely through the activity of students during the last four years. The collections include textiles, economic plants, articles of commerce and industry, samples of school work, economic minerals, historical relics, and other material from the province.

WINDSOR:

KING'S COLLEGE. Museum.

STAFF. Curator, Canon Vroom.

BOTANY. The Cogswell herbarium of cryptogams and phanerogams of Great Britain; the Gossip herbarium of Scottish plants; the Willis herbarium of Nova Scotia algae and terrestrial plants; the Strange herbarium of East Indian plants, presented in 1805; the Ball herbarium of 250 species of Nova Scotia plants. There are also a few specimens of wood, bark, leaves, and fruits.

GEOLOGY AND PALEONTOLOGY. The Almon collection of minerals, rocks, etc., chiefly from Scotland; the Governor's collection of coal fossils, obtained in 1860 at the Sydney Mines; the Alumni collection of Nova Scotia fossils; an Australian collection of fossils; a collection of British fossils; a collection of European crystalline and sedimentary rocks; and miscellaneous collections.

NUMISMATICS. A series of coins representing ancient Rome and most countries of the modern world.

ZOÖLOGY. The Willis collection of Nova Scotia mollusca; a collection of foreign shells; and a small number of other zoölogical specimens.

WOLFVILLE:

ACADIA UNIVERSITY.

The university maintains a museum, in charge of Ernest Haycock, curator, comprising 500 Canadian minerals; 300 rocks from Vancouver

Island; 500 minerals and rocks from Nova Scotia, chiefly from Kings County; 500 typical fossils, largely from European localities; and a miscellaneous collection of material of some ethnological and historical value.

ONTARIO

COLLINGWOOD:

HURON INSTITUTE.

The institute maintains a museum, established in 1904, in charge of James Morris, curator. The collections comprise 4000 Indian relics, local pictures, maps and historical documents, minerals, and botanical specimens. The museum is housed in the public library building and receives a grant of $100 annually from the provincial government. One volume of Papers and Records was published in 1909. The museum is open free to the public but there are no stated hours.

GUELPH:

ONTARIO AGRICULTURAL COLLEGE.

No information has been received regarding the college collections, which are said by Merrill to comprise a series of rock-forming minerals, and a collection of the characteristic fossils found in the geologic systems represented in Canada.

HAMILTON:

HAMILTON SCIENTIFIC ASSOCIATION.

No reply has been received to requests for information regarding this association, which is said by Merrill to have some interesting local fossils.

KINGSTON:

KINGSTON SCHOOL OF MINING.

No information has been received regarding the museum maintained by this school, which is said by Merrill to include 10,000 minerals; about 4000 specimens of historical geology and lithology; and a collection of Canadian fossils.

QUEEN'S UNIVERSITY. Museum.

STAFF. Curators, A. P. Knight, who is also professor of animal biology, and W. T. MacClement, who is also professor of botany.

ANTHROPOLOGY. The large Thomson collection of the weapons, utensils, dress, and ornaments of the aborigines of Queensland, New Guinea, Fiji, and the New Hebrides; and a small collection representing the art and manufacture of Formosa and Central India.

Botany. The Fowler herbarium, comprising about 30,000 mounted specimens of the plants of North America, Europe, Asia, South Africa, and Australia.

Zoölogy. Shells, 3000±; Insects, a small collection; Fishes, 60; Reptiles, a small collection; Birds, 200; Mammals, 36. The birds and mammals are exclusively from Canada.

Financial Support. By direct grant from the trustees of the university.

Building. The museum occupies about 2500 square feet of floor space in the administration building.

Scope. University instruction.

Attendance. Open free to the public every forenoon except Sunday.

LONDON:

LONDON AND MIDDLESEX HISTORICAL SOCIETY.

This society has a small historical collection kept at present in a room in the public library building.

OTTAWA:

GEOLOGICAL SURVEY OF CANADA. Museum.

Botany. Cryptogamic and phanerogamic herbaria, including over 500 types and co-types; and a collection of Canadian woods.

Geology. Minerals, on exhibition, 4100+, in storage, 3000+; Rocks, on exhibition, 1300. All specimens on exhibition are Canadian, special attention being given to material of economic importance.

Paleontology. Vertebrates, on exhibition, 200 species, types, 64+, types in plaster, 24, figured specimens, 140+. There are also bromide enlargements of photographs of mounted skeletons of 18 species of vertebrates, and of restorations of 14 species.

Zoölogy. In addition to representative specimens of the birds and mammals of Canada there is on exhibition a series of 85 species of recent marine sponges, including 44+ types and 46+ specimens. These sponges are from the Atlantic, Pacific, and Arctic coasts of Canada, and from the coasts of Greenland and Alaska.

Historical Sketch. The museum dates from the founding of the geological survey of Canada in 1843. In 1880 the survey and the museum were removed to the present quarters in Ottawa.

Financial Support. From funds voted by parliament for the maintenance of the geological survey.

Building. The present building has been occupied by the museum since 1880 and has long been inadequate to its needs. The new Victoria Memorial Museum is now almost completed and will house the collections in the near future.

Administration. The museum is maintained as an adjunct of the geological survey, under the department of mines.

Library. 17,000 volumes on natural science, intended primarily for use of the staff.

Publications. The museum issues no publications, but its collections have been described in the publications of the survey and in other journals.

Attendance. Open free to the public on week-days, except Christmas, from 10 to 4.

PERTH:

PERTH COLLEGIATE INSTITUTE.

No information has been received regarding the collections of the institute, which are said by Merrill to comprise a herbarium of 300 flowering plants of eastern Ontario; 400 minerals and 800 rocks; and a few fossils.

ST. THOMAS:

ELGIN HISTORICAL AND SCIENTIFIC INSTITUTE.

The institute has a small historical and archeological museum.

TORONTO

PROVINCIAL MUSEUM.

Staff. Superintendent, David Boyle; 2 clerks and 1 guardian.

Anthropology. About 1000 specimens from the Indian tribes of Canada and elsewhere, life masks of British Columbian and Washington Indians, miscellaneous archeological and ethnological specimens, etc.

Art. No detailed information received.

Botany. A herbarium of 500 plants of Ontario.

Zoölogy. 400 vertebrates, mollusks, and insects of Ontario.

Financial Support. An annual grant from the provincial government.

Building. The collections occupy about 30,000 square feet of floor space for exhibition.

Publications. (1) An archeological report. (2) A manual of the vertebrates of Ontario. (3) A catalog of the collections.

Attendance. Open free to the public on week-days from 9 to 5.

UNIVERSITY OF TORONTO. Museum.

Staff. General curator, Henry Montgomery; Curators, R. Ramsay Wright (zoölogy), A. P. Coleman (geology), T. L. Walker (mineralogy), W. A. Parks (paleontology), Henry Montgomery (American archeology), C. T. Currelly (oriental archeology); Assistant curators, B. A. Bensley (zoölogy), J. H. Faull (botany).

Anthropology. Good collections, now for the most part in storage.

Botany. Cryptogams, 15,000±; Phanerogams, 15,000±.

Geology. Minerals, 17,000±; Rocks, 4300±. These collections are for the most part systematic; some are synoptic; and some represent the minerals and rocks of Ontario. There is also a series illustrating the economic geology, especially of Canada.

Paleontology. Invertebrates, on exhibition, 11,000, in storage, 9000±, types and figured specimens, 348; Vertebrates and plants, small collections. This department includes a teaching collection, comprising 500 species of invertebrates and 178 maps and charts.

Zoölogy. Shells, 4800; Insects, 8500; Other invertebrates, 2000; Fishes, on exhibition, 170, in storage, 200; Batrachians, 100, in storage, 500; Reptiles, on exhibition, 180, in storage, 2000; Birds, 3500; Mammals, 300. There is also an insect collection of 170 specimens illustrating mimicry, and a collection of 500 bird eggs and nests.

Historical Sketch. The older collections of the university were housed in the main building and suffered seriously by fire in 1890. Since then collections have been gathered in several buildings and it is proposed to unite these upon completion of the new museum building. The museum of Victoria College is now in storage awaiting removal to the new general museum, of which it will form a part.

Financial Support. From the general funds of the university and province.

Building. A building intended to house all the museums of the university, except certain teaching collections, is in course of erection in 1910.

Administration. By a general curator, responsible to the president of the university.

QUEBEC

LAUZON:

COLLEGE ST. JOSEPH DE LÉVIS.

The college maintains a collection of several hundred birds and mammals, a series of shells, minerals, insects, and other scientific objects, in charge of J. R. Coulombe.

LONGUEUIL:

LONGUEUIL COLLEGE.

The college maintains a general museum in charge of Brother Victorin. The collections comprise a herbarium of 2000 phanerogams and 300 cryptogams; 300 minerals; and a zoölogical collection including 200 shells, 800 insects, 20 fishes, 30 reptiles, 200 birds, 50 mammals, and 200 bird eggs.

MONTREAL:

McGILL UNIVERSITY. Anatomical Museum.

The museum of anatomy was completely destroyed by fire in 1907 and is now being re-formed as a teaching collection. It is in charge of F. J. Shepherd, director.

McGILL UNIVERSITY. Museum of Hygiene.

This museum has been established from the income of an endowment provided in 1893, and is in charge of T. A. Starkey, director. It includes exhibits relating to disinfection, lighting and heating, water, buildings, soil, air, drainage and refuse disposal, food stuffs and clothing, vital statistics, and bacteriology and pathology in relation to public health. There is also a collection of over 1000 lantern slides. A complete descriptive catalog has been published.

McGILL UNIVERSITY. Pathological Museum.

Since the organization of the medical faculty, this museum has been an object of special attention, and for the past fifty years material has been systematically gathered from the Montreal General Hospital and other sources. Serious damage was done by the fire of 1907, and this is being repaired as rapidly as possible. The museum staff consists of J. G. Adami, director; Maude E. Abbott, curator; and E. L. Judah, preparator and osteologist.

McGILL UNIVERSITY. Peter Redpath Museum.

STAFF. Curator, D. P. Penhallow, and an assistant curator.

ANTHROPOLOGY. Archeological and ethnological collections from the Queen Charlotte Islands, from Egypt, and from South Equatorial West Africa.

BOTANY. A herbarium comprising 50,000 Canadian and exotic plants, and collections illustrating structural and economic botany.

GEOLOGY. General and economic collections of minerals and rocks, supplemented by casts and models.

PALEONTOLOGY. Synoptic series of fossils arranged both in the order of the geological system and in systematic order.

Zoölogy. Synoptic series of invertebrate and vertebrate animals. Among special collections, the Phillip Carpenter collection of shells is especially noteworthy.

NATURAL HISTORY SOCIETY OF MONTREAL.

No information has been received concerning the collections of this society, which are said by Merrill to include a general collection of fossils and the C. U. Shepard collection of 4000 minerals.

NUMISMATIC AND ANTIQUARIAN SOCIETY. Museum. (Chateau de Ramezay.)

Staff. Honorary curator, R. W. M'Lachlan.

Collections. Indian antiquities, 167 +; Historical portraits, views, maps, etc., 350±; Historical relics, 217±; Coats of arms, 218; Medals 300±; Documents, 41; Ceramics, 51; Furniture, 75±. Special exhibits include a room restored in the style of Louis XIV, and a Habitant room with appropriate furnishings.

Historical Sketch. The society was founded in 1862 as the Numismatic Society of Montreal; in 1866 the name was changed to the Numismatic and Antiquarian Society of Montreal; in 1870 the society was incorporated. The museum was organized by the society as a part of the celebration of the 250th anniversary of the founding of Montreal.

Financial Support. An annual grant of $400 from the Quebec legislature, supplemented by members' subscriptions, sale of catalogs, and donations.

Building. The Chateau de Ramezay was erected in 1705 by Claude de Ramezay, eleventh governor of Montreal; was sold by his family to the Compagnie des Indes in 1745; bought in 1763 by William Grant and sold to the English government for two thousand guineas; used as the residence of the governors till 1849; after which it served various purposes till 1894 when it was purchased by the city of Montreal; in 1895 it was obtained by the Numismatic and Antiquarian Society for the purpose of founding a historical portrait gallery and museum. The building proper is 150 feet in length and the portrait gallery is 50 x 20 feet.

Attendance. Open free to the public on week-days from 10 to 6. The number of visitors is about 100,000 annually.

QUEBEC:

LAVAL UNIVERSITY.

STAFF. The collections are in charge of the professors of the corresponding departments of the university. Professor J. C. K. Laflamme is in charge of geology, botany, mineralogy, and zoölogy.

ANTHROPOLOGY. Two large collections of Indian relics; a few specimens from the United States and the Pacific Islands; small collections of Egyptian, Chinese, and Japanese objects.

ART. A very rich collection of old engravings and perhaps the best private collection of old paintings in America.

BOTANY. A complete collection of Canadian plants, especially phanerogams; collections of Canadian woods of commercial value; a remarkable collection of commercial woods offered for sale in the markets of England; woods of New Zealand and France; and a collection of artificial fruits and vegetables. The university herbarium contains more than 10,000 specimens.

GEOLOGY. An almost complete collection of Canadian minerals and rocks, with additional collections from all parts of the world.

PALEONTOLOGY. Extensive collections of Canadian invertebrates, including many casts, especially of fossils found at Pikermi.

ZOÖLOGY. Shells, 950 species; Insects, 14,000 species; Other invertebrates, many corals, sponges, etc.; Fishes, several hundred; Batrachians, 100±; Reptiles, 150±; Birds, 600 species, 1200 specimens; Mammals, 300.

HISTORICAL SKETCH. The museum has had a gradual growth for about 75 years. It has received its collections from private gifts and purchases by the Seminary of Quebec, which was founded by Laval University.

FINANCIAL SUPPORT. By Quebec Seminary, a department of Laval University. A small additional sum is received from admission fees.

BUILDING. The building was erected in 1852 by the Quebec Seminary at a cost of 1,000,000 francs, and affords 50,000 square feet of floor space available for exhibition, and 5000 for offices, workrooms, etc.

ADMINISTRATION. By the authorities of Laval University.

SCOPE. Primarily, college teaching; secondarily, public school work and instruction of the general public.

PUBLICATIONS. The museum has no regular publications, but a detailed description of the collections is published in the annual catalog of Laval University.

MUSEUM OF PUBLIC INSTRUCTION.

STAFF. Curator, Victor A. Huard; Assistant curator, Arthur Thiboutot.

BOTANY. 3000+ species from Canada, United States, Europe, and Australia; 100± specimens of wood from Canada.

EDUCATION. 95 Deyrolle's tableaux on natural history and industry.

GEOLOGY. Minerals, 500±.

NUMISMATICS. A collection of 2727 coins and medals from all countries, including 773 from Canada and 520 from the United States.

PALEONTOLOGY. 200± fossils.

ZOÖLOGY. Shells, 3000 species; Insects, large collections; Other invertebrates, fishes, batrachians, and reptiles, small collections; Birds, 250± species; Mammals, 50 species, 105 specimens, including nearly every species of mammal from the province of Quebec; Bird eggs, 30 species. The insect collection includes two collections of Canadian insects made by Abbé Provancher, with more than 200 types of new species; also 580 species, 2300 specimens, of Canadian lepidoptera collected and named by Rev. T. W. Fyles.

HISTORICAL SKETCH. The Museum of Public Instruction originated in 1880 in collections accumulated by D. N. Saint Cyr. It was first located in the old legislative palace and in 1886 the founder was appointed curator, the museum having been up to that time largely his private collection. In 1889 the museum was moved to the new government palace where it now is. Dr. Léonidas Larne served as the second curator from 1889 to 1904. The present curator was first called to the museum in 1902 for special work and was appointed curator in 1904.

FINANCIAL SUPPORT. The museum receives a regular appropriation of $600 from the legislative assembly and council of the province of Quebec.

BUILDING. The museum occupies about 5000 square feet of floor space for exhibition, and 1000 for offices in the Provincial Government building.

ADMINISTRATION. By a curator, responsible to the superintendent of public instruction.

SCOPE. The primary object of the museum is the accumulation of local collections representing the province of Quebec and their utilization for the instruction of the general public.

LIBRARY. 250 volumes and 100 pamphlets relating to natural history and numismatics, intended for the use of the staff.

Publications. The first curator made three reports to the government from 1886 to 1890, which were published as official papers and contained reports of travels in Labrador and other parts of the province; studies on Cetacea and Pinnipedia of the lower St. Lawrence River; and catalogs of plants, minerals, mammals, birds, and eggs of the museum. The present curator made a report in 1910 on the progress of the museum from 1893 to June 30, 1909.

Attendance. Open free to the public on week-days, except Saturday afternoon and holidays, from 10 to 4.

SAINT-LAURENT:

COLLÈGE SAINT-LAURENT. Musée Carrier.

Staff. Curator, Philéas Vanier; Assistant curator, F. J. Donat.

Anthropology. Uncivilized peoples: Archeology, native, 344, foreign, 987; Ethnology, native, 143. Civilized peoples, ancient, 933, modern, 583.

Art. Objects, in marble, 118, in bronze and copper, 258, in plaster, 455, in terra cotta and majolica, 37; Prints and engravings, 980; Oil paintings and water colors, 15; Religious paintings, 780.

Botany. Cryptogamic and phanerogamic herbaria, 5161 species; Fruits, 480; Gums and resins, 32; Medicinal plants, 122; Canadian woods, 89; Thin sections of United States woods, 45; Leaves, 458.

Geology. Minerals and rocks, on exhibition, 3425; Minerals, in storage, 2622; Rocks, in storage, 1278.

Paleontology. Fossils, Canadian, 394 species, foreign, 495 species.

Zoölogy. Shells, 8792 specimens, representing 2920 species; Insects, 12,769 specimens, representing 5111 species; Other invertebrates, 305 specimens, representing 113 species; Fishes, 46; Batrachians, 5; Reptiles, 56; Birds, 715; Mammals, 513; Bird eggs, 806.

Other Collections. Coins and tokens, 9739; Medals and medallions, 5117; Postage and revenue stamps, 8917; Incunabula, 40.

Historical Sketch. The museum was founded by Rev. Joseph C. Carrier, who also served as curator until his death in 1904.

Financial Support. From the general funds of the college.

Building. Erected in 1896 at a cost of $15,000, defrayed by friends of the college.

Administration. By a curator, responsible to the superior of the college.

Scope. Primarily school and college teaching.

Publications. 26 Bulletins of the Library and Museum have been issued, either separately or as a part of the college catalog.

CONVENT DES SOEURS DE SAINT-CROIX.

Teaching collections are maintained in charge of Sister Marie de Sainte-Amélie. They comprise a herbarium of 600 cryptogams and 4400 phanerogams, with a collection of 100 fruits; 1400 minerals and rocks; 350 fossils; 2400 coins and 1300 medals; and a zoölogical collection including 1325 shells, 850 insects, 72 other invertebrates, 15 fishes, 10 batrachians, 25 reptiles, 306 birds, and 40 mammals. These collections occupy 1575 square feet of floor space in a building erected in 1889.

SHERBROOKE:

ST. CHARLES SEMINARY. Museum.

Staff. Caretaker, Leon Marcotte.

Mineralogy. A few hundred specimens of minerals and rocks.

Numismatics. Over 2000 coins, medals, etc.

Zoölogy. Shells, a few hundred; Insects, 3000 species, principally coleoptera and lepidoptera; Birds, 150; Mammals, 40.

Financial Support. By small annual grants from the seminary, supplemented by private contributions.

Building. The museum occupies over 4000 square feet of floor space in the fireproof building in the seminary.

Scope. Special attention is devoted to the natural history of the eastern townships of Quebec and to instruction of students in the seminary.

Attendance. Open free to the public. The attendance in 1909 was over 700.

VILLE ST. LOUIS:

MUSÉE DE L'INSTITUTION DES SOURDS-MUETS. (1941 Rue St. Dominique.)

This institution maintains a museum of objects useful in teaching language to deaf-mutes. The museum was formally organized in 1885 and is in charge of J. A. Jean, conservateur, assisted by other members of the faculty, none of whom receive remuneration for museum work. The collections comprise a herbarium of 175 cryptogams and 598 phanerogams from the province of Quebec; a numismatic collection of 3737 pieces, especially rich in Canadian coins; a general collection of about 5000 postage stamps; and a zoölogical collection comprising 975 shells, 14,000± insects on exhibition and 5000 in storage, 23 fishes, 528 birds, and 52 mammals. With the exception of the mollusca, the zoölogical collection is composed almost exclusively of local specimens. The museum occupies 1800 square feet of floor space for exhibition, and 600 for offices, workrooms, etc., in a building erected in 1895 at a cost of $10,000.

BERMUDA

HAMILTON:

BERMUDA NATURAL HISTORY SOCIETY. Museum and Aquarium.

The society maintains a museum of local natural history in Queen Street, Hamilton, in charge of Louis L. Mowbray, curator, and 1 assistant. The society also leases from the British government the whole of Agar's Island, with its buildings, and has converted the powder magazine into a public aquarium, in charge of Louis L. Mowbray, superintendent, and 1 assistant. An admission fee of 1 shilling is charged. The income of the society for the support of these institutions is derived from membership fees, admission fees to the aquarium, and private subscriptions.

The Bermuda Natural History Society also furnishes to the Bermuda Biological Station for Research, free of expense, the use of the barracks, which have been converted into a laboratory provided with running sea water and the usual equipment for such purposes.

MEXICO

CAMPECHE

CAMPECHE:

INSTITUTO CAMPECHANO.

The institute has a quantity of archeological material founded by a former director, Patricio Trueba, without classification or arrangement.

FEDERAL DISTRICT

TACUBAYA:

COMISIÓN EXPLORADORA DE LA FAUNA Y FLORA NACIONALES.

This commission maintains a museum in charge of Fernando Ferrari Pérez, engineer and chief of the commission, who is responsible to the Department of Improvement.

MEXICO

MEXICO:

MUSEO NACIONAL DE ARQUEOLOGÍA Y HISTORIA.

STAFF. Director en misión, Francisco del Paso y Troncoso; Director efectivo, Genaro García; Secretary, Nemesio García Naranjo; Professors, Genaro García (history), Ramón Mena (archeology), Andrés Molina Enriquez (ethnology), Mariano J. Rojas (Mexican language); Assistants, Manuel Gamio (history), Isabel Ramirez Castañeda (archeology); Temporary assistant, Agustin Agueros (ethnology); In charge of industrial art, Antonio Cortés; In charge of publications, Ignacio B. del Castillo; Librarian, José Gener Ortiz; 3 clerks, 2 artists, 1 photographer, 1 modeler, 3 assistants in the department of publication, 1 manager of the press department with 2 helpers, and 1 chief of the photogravure department with 2 helpers.

No information has been received regarding the collections of this museum which was founded in 1831.

MUSEO NACIONAL DE ARTILLERÍA.

The object of this museum is the acquisition and preservation of historical relics relating to the military service, including weapons of all kinds and nationalities, ordnance and supplies, projectiles, cartridges and fuses, and especially such objects as are connected with the military history of the republic. These collections are in charge of brevet-captain of artillery, Luis G. Nuñez, who is responsible directly to the director of the national armory. The authentication of specimens is in the hands of a commission appointed for this purpose, and divided into sub-commissions on flags, ordnance and supplies, portable arms, and sundry objects. The museum is open to the public on week-days, except holidays, from 8 to 12 and 3 to 6.

MUSEO NACIONAL DE HISTORIA NATURAL.

Staff. Director, Jesús Sánchez; Professors, Gabriel Alcocer (natural history), Manuel Urbina (botany), George Engerrand and Jesús Sánchez (zoölogy), Manuel M. Villada (mineralogy, geology, and paleontology), 1 collector and preparator in zoölogy and 1 janitor.

No information has been received regarding the collections of this museum.

MUSEO TECNOLÓGICO INDUSTRIAL.

This museum is in charge of Albino R. Nuncio, chief of the second section of the Department of Fomento (Public Promotion), Colonization, and Industry. The rules provide for a curator and a servant in addition. The purpose of the museum is to make collections of mineral, vegetable, and animal raw materials produced in the country, together with full information regarding the articles manufactured from these materials; local and foreign markets; transportation lines and rates; and a technological library. A bureau of information is also maintained.

SECRETARÍA DE HACIENDA Y CRÉDITO PÚBLICO.

This department maintains a museum of a technical character in the custom house in charge of Manuel Muñoz, chief of the department.

MICHOACAN

MORELIA:

COLEGIO DE SAN NICOLÁS DE HIDALGO.

Staff. Director, Manuel Martinez Solorzano; Taxidermist and janitor, Fermin Gutierrez.

Collections. Archeology, 1880; Ethnology, 138; History, 904; Natural history, 8324.

Library. 860 volumes.

MORELOS

CUERNAVACA:

SEMINARIO DE CUERNAVACA.

The seminary maintains teaching collections in Mexican archeology and numismatics, Christian art, and natural history. It is in charge of Bishop Francisco Plancarte y Navarrete, who provides the funds for its maintenance.

TEPOZTLAN:

MUSEO MUNICIPAL.

This museum is in charge of Alfonso Rojas, curator, who is responsible to the city council by which the museum is maintained. Its object is the collection of antiquities.

NUEVO LEON

MONTEREY:

COLEGIO CIVIL.

The college maintains museum collections in charge of a preparator.

OAXACA

OAXACA:

INSTITUTO DE CIENCIAS.

The institute maintains a museum in charge of Francisco Leon Calderon.

PUEBLA

PUEBLA:

ACADEMY OF FINE ARTS.

The academy maintains a museum of archeology.

COLEGIO DEL ESTADO.

The college maintains teaching collections in natural history which may be visited by the public by permission of the director of the college.

QUERÉTARO

QUERÉTARO:

Two museums, one of natural history, the other an industrial museum are maintained in the governor's palace.

VERA CRUZ

ORIZABA:

COLEGIO PREPARATORIO.

This school maintains teaching collections in botany and zoölogy.

ESCUELA NORMAL PRIMARIA.

This school has a museum in charge of Horacio N. Seaver.

TLAUTALPAN:

ESCUELA ESPECIAL DE COMERCIO.

This school maintains a small teaching collection.

VERA CRUZ:

COLEGIO PREPARATORIO.

This school maintains a small museum of natural history.

XALAPA:

COLEGIO PREPARATORIO.

This school maintains a natural history collection in charge of a preparator.

YUCATAN

MERIDA:

There is in this place a museum devoted expecially to archeology and in charge of Alfredo Zavala Castillo, director.

CENTRAL AMERICA

COSTA RICA

SAN JOSÉ:

MUSEO NACIONAL.

STAFF. Director and zoölogist, Anastasio Alfaro; Botanist, Adolfo Tonduz; Taxidermist, Adán Lizano; 2 preparators in archeology, 1 guard, 1 keeper, and 1 doorman.

ANTHROPOLOGY. Local collections in archeology and ethnology, including specimens of native gold work, ceramics, textiles, etc.

ASTRONOMY. An observatory connected with the museum and in charge of an astronomer. There is also a meteorological station of the first order with two meteorologists.

BOTANY. A herbarium of 20,000 specimens, representing 4000 species of Costa Rican plants.

COMMERCE AND INDUSTRY. A collection of native vegetable products, including coffee, cocoa, etc.

GEOLOGY. A small collection of minerals, rocks, and fossils of Costa Rica, and a relief map of the country.

HISTORY. Ancient and modern weapons, including stone axes and hatchets, and bows and arrows of native Indian tribes; weapons and other relics of the campaign of Walker in 1856-57; and a small collection of oriental weapons.

ZOÖLOGY. This department includes the national collections, representing all the zoölogical groups but not cataloged.

OTHER COLLECTIONS. A collection of medals and coins.

HISTORICAL SKETCH. The museum was founded in 1887 under the administration of President Bernardo Soto, with a collection of native antiquities, bequeathed to the nation by Sr. Troyo and soon increased by purchase of other collections. The zoölogical collections owe their importance to the work of Anastasio Alfaro and George K. Cherrie on the vertebrate groups; José C. Zeledon on birds; Cecilio Underwood on entomology, birds, and mammals; Pablo Biolley, J. F. Tristan, and Enrique Pittier on invertebrate groups. The botanical collections have been developed by Alfaro, Biolley, Pittier, Adolfo Tonduz, and Carlos Wercklé.

Financial Support. The museum is supported by an annual government appropriation of 6000 colones (colon = 46.5 cents).

Building. The museum is temporarily installed in a college erected in 1877, pending the erection of a new building.

Administration. By a director, responsible to the minister of Fomento.

Scope. Local collections and public instruction are the primary purposes of the museum.

Library. A miscellaneous collection consisting in large part of periodicals. Each section of the museum has its own working library.

Publications. The museum has no special publications, the work of the staff being published in local and foreign journals.

Attendance. Open free to the public daily, except Sundays and holidays, from 7 to 10 and 12 to 4.

SOUTH AMERICA

ARGENTINA

BUENOS AIRES:

MUSEO HISTÓRICO NACIONAL.

This museum contains historical relics and other objects of interest.

MUSEO MITRE.

This museum consists of the private house and library of the late Gen. Bartolomé Mitre, purchased by the government and transformed into a museum.

MUSEO NACIONAL DE BELLAS ARTES.

This museum contains pictures and other objects of art.

MUSEO NACIONAL DE HISTORIA NATURAL.

STAFF. Director, Florentino Ameghino; Naturalists, Carlos Ameghino and E. de Carles; Curator of zoölogy, Roberto Dabbene; In charge of entomology, Juan Brèthes; Secretary and librarian, Agustin J. Pendola.

COLLECTIONS. Chiefly natural history material, with some specimens in American archeology and ethnology.

LIBRARY. Chiefly zoölogical.

ATTENDANCE. Open to the public daily from 12 to 4.

UNIVERSIDAD NACIONAL. Museo Ethnográfico.

This museum is devoted to the archeology and ethnology of America, especially Argentina, and is maintained by the department of philosophy in the university.

UNIVERSIDAD NACIONAL. Museo Farmacológico.

This museum contains pharmacological and botanical collections, and is maintained by the medical department of the university.

CÓRDOVA:

MUSEO DE LA ACADEMIA NACIONAL DE CIENCIAS.

This museum consists of natural history collections.

MUSEO POLITÉCNICO.

This museum consists of material illustrating local history, with some natural history specimens.

UNIVERSIDAD NACIONAL.

The university is said by Minerva to maintain a museum of mineralogy in charge of W. Bodenbender, director; a botanical museum in charge of F. Kurtz, director; and a zoölogical museum in charge of A. Doering, director.

LA PLATA:

MUSEO DE LA PLATA.

This museum was organized in 1877 and includes extensive collections in geology, paleontology, and zoölogy, as well as American anthropology and ethnology. The several departments are in charge of the professors of these subjects in the national university at La Plata.

PARANÁ:

MUSEO PROVINCIAL.

This museum contains small natural history collections.

BOLIVIA

CHUQUISACA:

MUSEO NACIONAL.

No information has been received regarding this museum.

BRAZIL

RIO DE JANEIRO:

INSTITUTO HISTORICO E GEOGRAPHICO BRAZILEIRO.

No information has been received regarding this institution.

MUSEU NACIONAL.

No information has been received regarding this museum, which is said by Minerva to have been organized in 1818, and to contain departments of anthropology, botany, geology, paleontology, and zoölogy, and also a library and a botanical garden.

CHILE

CONCEPCION:

MUSEO DE CONCEPCION.

Staff. Director, Edwyn C. Reed (address: Box 435); 1 taxidermist and 1 porter.

Botany. 2000 specimens in storage as the nucleus of a herbarium.

Zoölogy. Arthropods, native, 431, exotic, 2065, in storage, 20,000; Reptiles, native, 18, exotic, 9; Birds, native, 465, exotic, 233; Mammals, 53, exotic, 48; Craniums, 35; Specimens in alcohol, 103. There is also a regional collection of 2653 specimens and a special section for students with 1696 specimens.

Historical Sketch. This museum was founded in 1902 by the present director.

Financial Support. An annual grant of $3500.

Building. At present the collections occupy a house in the city and a department of the Lyceum.

Library. More than 1500 bound volumes and pamphlets.

PUNTA ARENAS:

MUSEO DEL COLEGIO SALESIANO.

This museum contains local collections in natural history and ethnology.

SANTIAGO:

MUSEO DE HISTORIA NATURAL DE VALPARAISO.

Staff. General director and chief of the zoölogical section, Carlos E. Porter (address, Box 2352); Chief of mineralogical section, Aurelio Zilleruelo; Chief of botanical section, John D. Yugers; Librarian, Salvador Castañeda; Taxidermist, Eleuterio Ramirez; 1 porter.

Collections. The museum having been entirely destroyed by the earthquake of 1906, the collections are all in process of re-formation. There are now on hand some anthropological objects; more than 3000 specimens of useful trees and seeds; important collections of copper and silver from Aconcagua; some fossil mollusks, and more than 15,000 zoölogical specimens.

Historical Sketch. The museum of Valparaiso was first established in 1878 as an annex to the Lyceum of Valparaiso. The museum was reorganized in 1897 and made independent of the Lyceum. Since that time it has been in charge of Prof. C. E. Porter. The museum was entirely destroyed in the earthquake of August 16, 1906, and is now in course of re-formation at Santiago, with a view to ultimate transfer to Valparaiso when the reconstruction of that city shall be sufficiently advanced.

FINANCIAL SUPPORT. An annual grant of $3800 for acquisition of specimens, cases, and administration.

BUILDING. The museum is at present installed in a large hall of one of the State Lyceums at Santiago.

ADMINISTRATION. By a director, responsible to the minister of instruction.

LIBRARY. About 2000 works of natural history at the end of 1908.

PUBLICATIONS. The Revista Chilena de Historia Natural was founded privately by Professor Porter but has served as the organ of the museum since he became its director.

MUSEO NACIONAL DE CHILE.

STAFF. Director, Federico Philippi; Zoölogist, Bernardino Quijada; Entomologist, Philibert Germain; Botanist, C. Reiche; Mineralogist, Miguel R. Machado; Preparator, Zacarias Vergara; Assistant, Bernardo Gotschlich; 1 dissector, 1 major domo, 1 secretary, and 2 servants.

ANTHROPOLOGY. Archeology, native, 1305, foreign, 2386; Ethnology, native, 1086; Special collections from Peru and Easter Island.

BOTANY. Native plants, 117 books. Exotic plants, 138 books. There are also collections of Chilian and foreign drugs, fruits, and seeds; Chilian timbers; drawings and engravings of characteristic Chilian plants; rare Chilian plants in formol; specimens showing plant diseases; drawings showing vertical and geographical distribution of important families of Chilian plants; and an especially important collection of characteristic plants of the high Cordillera.

GEOLOGY. Minerals, 5500±; Rocks, 3000±. There are also a few meteorites and some rare ores.

PALEONTOLOGY. 100,000± specimens, including some figures and plaster casts of *Megatherium*, etc. Especially noteworthy are two cetacean skeletons from Chile.

ZOÖLOGY. Shells, catalog incomplete; Insects, 65,000±, mostly determined; Other invertebrates, 590 species, including a very large and fine *Kämpferia kämpferi* from Japan; Fishes, 277 species, including fine specimens of *Ceratodus forsteri*, *Orthagoriscus*, *Xiphias*, and *Istiophorus;* Batrachians, 59 species; Reptiles, 102 species; Birds, native, 285 species, foreign, 1235 species; Mammals, 412 species. Exhibits to show adaptation, metamorphosis, and mimicry have been begun. A small number of bird groups is exhibited in natural surroundings.

HISTORICAL SKETCH. The museum originated in a contract made by the government in 1830 with Claudio Gay to collect objects of natural history in Chile and to form a museum. Gay returned to France in 1842 for the publication of his researches in Chile. The museum which he left in Santiago was nearly abandoned and many specimens were lost or destroyed by neglect, so that only a very poor collection existed in 1853 when Dr. R. A. Philippi became director. Since that time the museum has developed rapidly by collections made by the director and the staff and by exchange. Dr. R. A. Philippi retired in 1897 at the age of 89, being succeeded by his son, Federico Philippi.

FINANCIAL SUPPORT. The museum is dependent solely upon government appropriations for its support. The following is a typical annual budget: for salaries, $25,900; for minor employees, general expenses, explorations, and accessions, $6000; for printing, $1500; for cases and stands, $1000; for library, $1000; total, $35,400 Chilian currency.

BUILDING. Erected by the government in 1875 for an international exposition, afterwards devoted to the museum and the agricultural institute. It provides a floor space of 3960 square meters for exhibition, and 1400 for offices, workrooms, etc. This includes a roofed yard of 1233 square meters.

ADMINISTRATION. By a director, responsible to the minister of public instruction.

SCOPE. Exploration and research, supplemented by exhibition and public and school instruction.

LIBRARY. A reference library of 1839 works on natural science.

PUBLICATIONS. Anales del Museo Nacional, published at irregular intervals, 17 numbers having already been issued. Boletin del Museo Nacional, 1 volume has been issued and, beginning with 1910, 1 volume will be published annually.

ATTENDANCE. Open free to the public on Sundays and Thursdays from 12 to 5 except in January and February. Open to schools on any afternoon upon application to the director. There are no statistics of attendance, but on Sundays and on holidays which fall on Thursday, the number of visitors frequently exceeds 3000.

COLOMBIA

BOGOTÁ:

MUSEO NACIONAL.

Staff. Director, Rafael Espinosa Escallon; 1 assistant and 1 janitor.

Anthropology. Collections illustrating the life and customs of the indigenous races.

Art. Oil paintings and portraits, textiles, ceramics, etc.

Botany. The Triana herbarium of 3950 species of native plants acquired in 1856; the Gamba collection of 195 species formed in 1878; a collection of 277 species of ferns; the Samper collection of 30 species of Swiss flowering plants; the Thomson collection of 50 herbarium sheets of the orchids of Colombia. There are also collections of economic plants and plant products.

Geology. The Moore collection of about 200 minerals received in 1886; an economic collection of 100 minerals from France; a collection of 100 minerals and rocks chiefly from France; the Samper collection of local minerals and the Gledhill collection of minerals received in 1886; a collection of minerals and rocks of the Panama Canal obtained in 1885; the Gamba collection of 196 minerals and 10 fossils received in 1878; and a collection of chlorides of sodium from the principal salt localities of Colombia.

History. Extensive collections illustrating local history.

Numismatics. Large collections of general and local coins, medals, etc.

Paleontology. Common genera of fossil shells, etc., of Colombia and a collection of mastodon fragments from local sites.

Zoölogy. Synoptic collections of vertebrates and invertebrates.

Historical Sketch. The national museum of Bogotá had its beginning in the early part of the 19th century under the direction of Dr. José Celestino Mutis who had associated with him a body of young men of high standing in science and art. His death in 1808 and the vicissitudes of the war of independence resulted in the cessation of activity in the museum and the manuscripts, herbaria, pictures, and other objects were sent to Madrid where many of them are still preserved. With the establishment of the republic in 1823 the new national museum was founded as a center of instruction in the arts and sciences. In 1824 the museum of natural history which had been previously organized was merged in the new museum. Later an archive of historical documents was added. Since that time the museum has suffered severely from the wars and political disorders. During the past few years, under the present director, Rafael Espinosa Escallon, a partial reorganization has been accomplished.

Scope. The museum comprises three departments: (1) National history, archeology, and curiosities; (2) Natural history, mainly the natural products of the country and their economic application; and (3) Pictures of objects of national art.

Library A working collection of books and pamphlets related to subjects treated in the museum.

Publications. A guide descriptive of the collections.

ECUADOR

QUITO:

MUSEO NACIONAL.

No information has been received regarding this museum.

PARAGUAY

ASUNCION:

MUSEO Y ARCHIVO DE LA NACIÓN.

This department maintains a museum and archives of fine arts history, and Americana, in charge of Juansilvano Godoi, director-general.

PERU

LIMA:

MUSEO NACIONAL.

No information has been received regarding this museum.

URUGUAY

MONTEVIDEO:

MUSEO NACIONAL.

Staff. Director, José Arechavaleta; In charge of fine arts, Juan Masa; In charge of history, Antonio M. Gorri; Preparator, Juan H. Figueira; Assistant in zoölogy, Juan Tremoleras; 3 aids and e porters.

Collections. The museum comprises two sections—natural history and fine arts. The former includes anthropology, botany, mineralogy, paleontology, and zoölogy; the latter includes painting and sculpture, and objects related to the history of the republic.

The museum was established in 1837. It publishes a series of Anales, of which volume 7 was in course of publication in 1909. It has also published catalogs of the collections. The museum is open to the public on Thursdays and Sundays, except holidays, but transient visitors are admitted on application to the director.

VENEZUELA

CARACAS:

MUSEO NACIONAL.

The museum is in charge of C. Witzke, director-general, and publishes a bulletin entitled, El Museo Nacional, the first issue of which is dated July, 1909. No information has been received regarding the collections.

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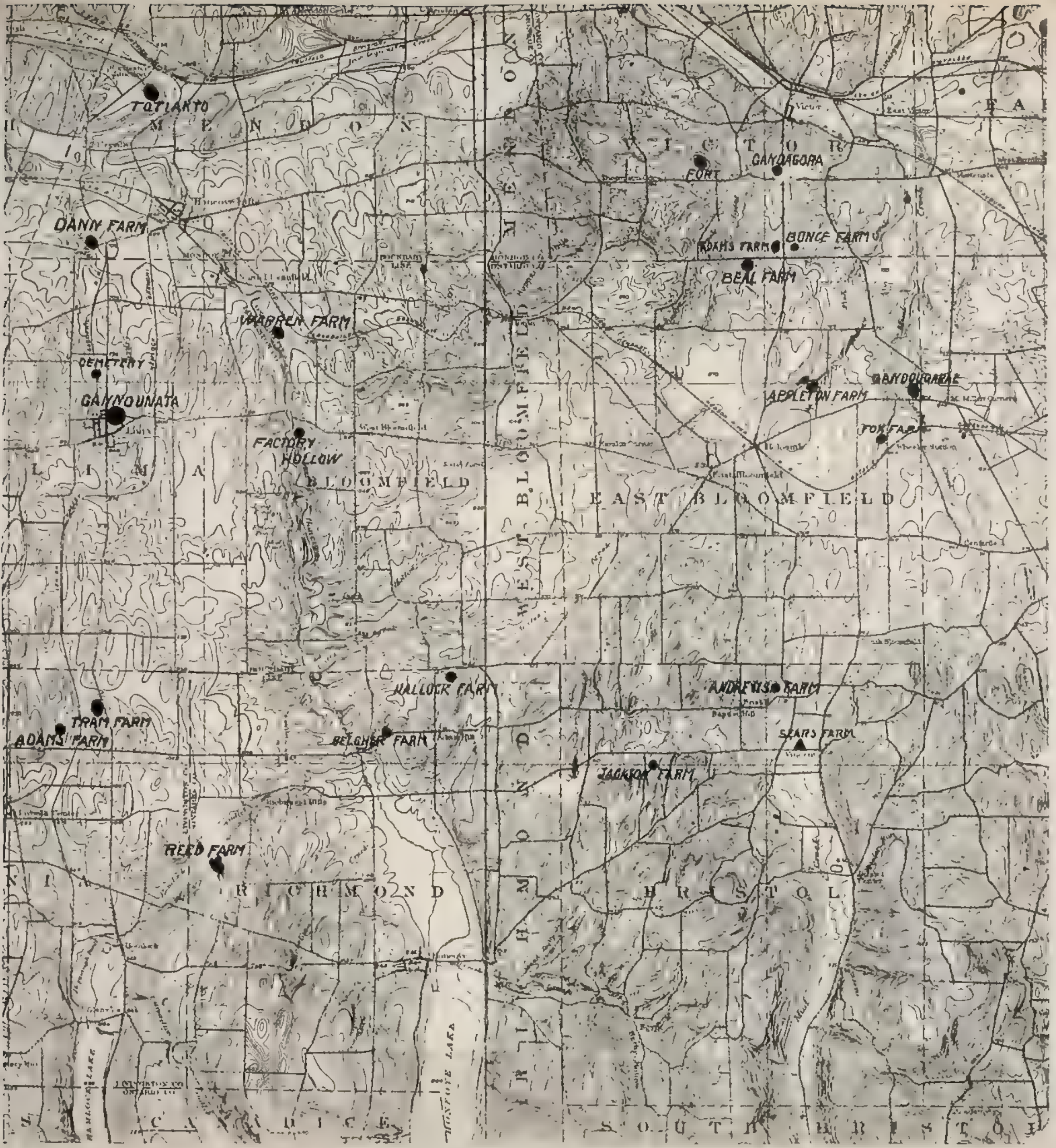
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GANNOUNATA
APPLETON FARM
GANDOUGARAE
FOX FARM
FACTORY HOLLOW
LIMA
BLOOMFIELD
WEST BLOOMFIELD
EAST BLOOMFIELD
HALLOCK FARM
ANDREWS FARM
TRAM FARM
ADAMS FARM
BELCHER FARM
SEARS FARM
JACKSON FARM
REED FARM
RICHMOND
BRISTOL
CANADICE
SOUTH BRISTOL
HEMLOCK LAKE
HONEOYE LAKE

Seneca Villages of the 17th Century.

BULLETIN
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The Seneca Nation from 1655 to 1687.

By Frederick Houghton, M. S.

INTRODUCTION.

The Seneca Nation of Indians belongs to the Iroquoian linguistic stock and during the 17th century it was the western canton of the Iroquois Confederacy, called by the English of that time the Five Nations of New York. Its kindred nations of the Iroquoian family and of the Confederacy are as follows:

Iroquoian Family.
- Hurons
- Tionontati (Tobacco Nation)
- Attiwandaronks (Neutral Nation)
- Conkhandeenrhonon
- *Iroquois Confederacy*
  - SENECA
  - Cayuga
  - Onondaga
  - Oneida
  - Mohawk
- Tuscaroras (with Iroquois after 1726.)
- Andastes (Andastogues, Conestogas, Susquehannocks)
- Eries (Cat Nation)
- Nottoway
- Meherrin
- Cherokee

When the Seneca Nation was first definitely located it occupied the region lying between the Genesee River and Seneca Lake, and there it seems to have been seated for a relatively long time before the opening of its historic period. Whence the nation came and when it first appeared in New York are unknown.

The name "Seneca" is "the Anglicized form of the Dutch pronunciation of the Mohegan rendering of the Iroquoian ethnic appellative *Oneida* or strictly, *Oneniute'aka* and with a different ethnic suffix *Oneniute' ron non* meaning 'people of the standing or projecting rock or stone.' (*1) The name "Sennecaas" was applied by the early Dutch cartographers and colonists to four nations, probably to the four "upper Iroquois" including the Senecas, the Cayugas, the Onondagas and the Oneidas, to the last of which only it really belonged. As these nations and their names became better known, the name narrowed down by the elimination of one nation after another until it designated only the farthest nation which has since kept the name. The French colonists called them Sonontouans which was their spelling of the Iroquois name for the nation, *Djiionon do wanen aka* meaning "People of the Great Mountain." This meaning was kept in the name given them by their Algonkin neighbors, the Delawares, who called them *Maschachtinni*, or "Great Mountain."

The Seneca Nation was sedentary and domiciled in long bark houses in permanent villages, and for more than a century it dominated all eastern North America, partly by shrewd and farsighted diplomacy, partly through its affiliation with its kindred nations in the confederacy, partly by sheer brute force expressed in its ferocity and cruelty. The legend "Nation Destroyed" which appears on all maps of the 17th century appended to names of Indian tribes attests the policy of the Senecas toward their neighbors. More than any other agency the Seneca nation thwarted the imperial plans of the French in America. A war not of their making caused its downfall and its scattered remnants now occupy lands in New York State and Canada.

The Seneca Occupation of New York.

The time during which the Seneca Nation inhabited New York may be divided (for historical purposes) into five periods.

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*1 Handbook Am. Ind., Vol. 2, 502.

The first period may be termed the Stone Age of the Senecas. It is of unknown duration, but it embraces their prehistoric occupancy and terminates with the first coming of the white traders.

The second period extends from the coming of the Europeans until the first ministrations of the Jesuit missionaries in 1657.

The third period extends from the coming of the Jesuits until the devastation of the country by the French army under Denonville in 1687.

The fourth period begins with the reconstruction of the Seneca towns in 1687 and ends with their destruction in 1779 by the colonial army under Gen. Sullivan.

The fifth period extends from 1779 until today.

This monograph has to do with the country of the Senecas during the third period only, that is, from the coming of the Jesuit missionaries until 1687.

Our knowledge of the Senecas during this period is derived from three sources, viz. from accounts by the French of Canada; from accounts by the English at Albany, and from archæologic research.

Owing to the fact that for many years the Seneca Nation was the greatest obstacle to the French in their imperial plans for Canada, French writers and cartographers were busy during the entire period describing the Senecas and their country. Priests, diplomats, explorers, soldiers and traders wrote about them, and, with good reason, their descriptions were never flattering.

The Dutch of New Netherlands had no trouble with the Senecas. Dutch traders had evidently reached them very soon after the Hudson River settlements were made, but as they were interested only in the needs of the Senecas from the point of view of trade, they left no descriptions of the country they visited.

The English who succeeded the Dutch at New York and Albany succeeded them also in the Seneca trade, and, like their Dutch predecessors, they never had trouble of any kind with them, nor at first any reason for being at all interested in them other than as customers. It was not until the administration of Governor Dongan began in 1683 that these Indians became of interest politically, or to others than Indian traders. It is not until 1677 that we have any first hand information about the Senecas from an English source. Practically all the information about them from English sources during the period is second hand, mostly given in official documents based upon oral reports by Indians or whites.

Knowledge derived from archæologic sources is equally scant. Their villages of that period were destroyed in 1687 and the sites of the villages seem to have been abandoned by the Senecas at that time. By the time their country was opened up to white occupancy after Sullivan's expedition in 1779, all knowledge of these villages was lost and when the first settlers chanced upon their sites, marked as they were by kettles, axes and beads in immense numbers, they were puzzled to account for them. It was not until Mr. O. H. Marshall made a study of certain French manuscripts that the sites of the great villages were positively identified and located. One of the sites was described as an earthwork by E. G. Squier who followed Marshall in identifying it as Gandagora.

Because the village sites have been under cultivation for nearly a century, and have been described and studied for a half century, they have naturally attracted the attention of the collectors and archæologists of three generations. Every Seneca site of this period has been walked over and dug into for the best part of a century. Literally tons of archæologic material have been taken from them, yet there exists today to my knowledge not one single description of the customs and manner of living of the Senecas of that period as shown by archæology. The thousands of articles found have been accumulated by private collectors. Some have been sold or donated to the State Museum, with few or no data for guidance. Some are in the possession of the original collectors mainly without data. The field work on the sites, done by the Buffalo Society of Natural Sciences, has been the only archæologic work carried on with the deliberate intention of learning something of the people who once lived there, and its field work has been successful in that it has resulted in the discovery of material which goes far to reconstruct for us the life of the Seneca Nation of that time.

This third period of Seneca occupancy began when Father Joseph Chaumonot appeared in the Seneca towns in 1657, and was ended by the devastation of the country in 1687 by a French punitive expedition under the Marquis de Denonville, the Governor of New France. It was characterized by the attempted domination of the Senecas by the French through diplomacy, missionary effort and warfare, by the steady growth of English influence, a recognition on the part of the English of the great value of the Senecas as a friendly buffer nation, and by incessant warring of the Senecas with other Indians and with the French. As ''pride cometh before a fall'' so was the highest note of Seneca arrogance struck in the years just preceding the ruin wrought at the hands of the French, which terminated this eventful period.

The Testimony of Recorded History.

THE SENECA COUNTRY.

At this time the country of the Senecas was called by the French ''Sonnontouan'' or ''Tsonnontouan'' and the people ''Sonnontouans'', or ''Senecas''. The word ''Sonnontouan'' is sometimes applied, wrongly I think, to different villages of the Senecas. Mr. A. C. Parker, (*1) following Gen. John S. Clarke, calls Totiatko ''Sonnontouan''. There can be little doubt, however, that Sonnontouan was the general name for the Seneca country, not the name of a Seneca town. Galinee, in his map, expressly shows four villages with the notation ''4 villages of the Sonnontouans''. Yet on later maps, notably that of Lewis Evans, of 1755 and Governor Pownal, of 1776, a Seneca town is named Chenandoanes.

Sonnontouan, or the country of the Senecas, at this period was understood by the French and English to mean an indefinite territory south of Lake Ontario, west of the Cayugas. Of its delimitations they knew nothing. We know now in a general way that the Seneca country lay south of Lake Ontario in the Genesee valley, probably, for a part of the period at least, entirely east of that river, and running eastward until it met the Cayuga country, approximately at Seneca Lake. Westward at that time there could have been no boundary, at least in New York. The overthrow of the Neuters in 1651 by the combined arms of the Five Nations left the country between the Genesee River and the Detroit River for many years an unoccupied wilderness and in this wilderness the Senecas certainly established a few villages, probably bases for hunting parties. Southward, also, we know of no boundary. At the very beginning of this period the Senecas overthrew their Iroquoian kin, the Eries, whose seat was south

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*1 A. C. Parker, Iroquois Uses of Maize, p. 35.

of Lake Erie, stretching probably from Eighteen Mile Creek in Erie County, N. Y., westward through Pennsylvania into Ohio. After their overthrow, it is extremely probable that the Senecas established a few villages along Lake Erie. The early Seneca sites on Cattaraugus Creek may mark this occupancy. Southward, also, lay the Andastes or Gandastogues, another Iroquoian nation, whose seat was in the Susquehanna valley. Their northern boundary, which would probably have been the southern boundary of the Senecas, is unknown, but the marches between them constituted a battleground upon which flickered a continual war of reprisals.

All that is possible for us to say is that the main body of Senecas, when at home, lived in the country between the Genesee River and Seneca Lake. This restricted area is now included in the counties of Ontario, Monroe and Livingston.

THE SENECA TOWNS.

Before the coming of the Jesuit missionaries to the Senecas the number and location of the Seneca towns were unknown. To be sure, traders from Albany, and perhaps from Montreal also, had visited their villages as early as 1635, or even earlier, but no written record of their visits, or report based upon these visits is now available. It was quite generally known, both by the French and Dutch, and later by the English, that the Seneca Nation lived in ''castles'' or fortified villages, somewhere west of the Onondagas. But no accurate information prior to 1658 has come down to us.

The first systematic effort to secure first hand information regarding the Seneca villages was made in 1655. In that year two priests, Joseph Chaumonot and Claude d'Ablon, were sent by the Jesuit Superior from Quebec to Tsonnontouan on a reconnoitering expedition. (*1) They reported to the Superior, and their report is mentioned in the Jesuit Relation of the next year as having been made, but the Relation of 1655 does not take them farther than Onondaga.

In the relation of 1656-58, (*2) the writer states that the country of the Sonnontouans ''contains two large villages and a number of small ones, besides the Huron village called St. Michel.''

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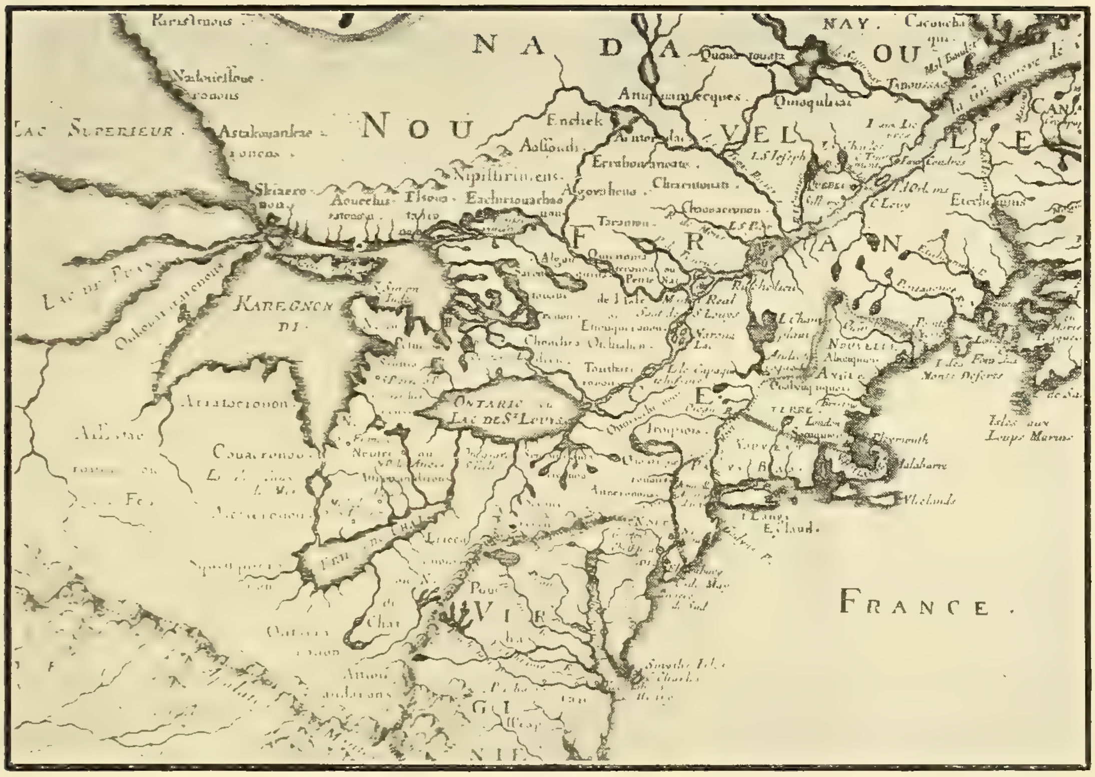
*1 Jes. Rel., Burrows ed., Vol. 43, p. 99.

*2 Jes. Rel., Burrows ed., Vol. 44, p. 21.

In 1657 Father Chaumonot left the Cayugas and visited the Senecas. He "assembled all the Elders of Gandagan, the principal village of Sonnontouan." Mr. R. G. Thwaite thinks (*1) that "Gandagan" is a misprint for "Gandagare" and in his index Mr. Thwaite calls this "Gandougarae."



From Map by N. Sanson d' Abbeville Paris 1656.
Marshall Library, Buffalo Historical Society.

In the Relation of 1664-65 the writer in describing the Iroquois states (*2) that "toward the termination of the Great Lake, called Ontario, is located the most numerous of the Five Iroquois nations, named the Senecas, which contains full twelve hundred men in two or three villages, of which it is composed."

A more detailed report of the location of the Seneca villages was made by Father Jacques Fremin, in 1668. He was at that time Superior of Iroquois missions. In November of that year he reached Tsonnontouan. He reported (*3) that his mission of St. Michel consisted of four villages, three of which he names, "Gandachiragon, Gandougare and Gandagaro." (*4) "Gan-

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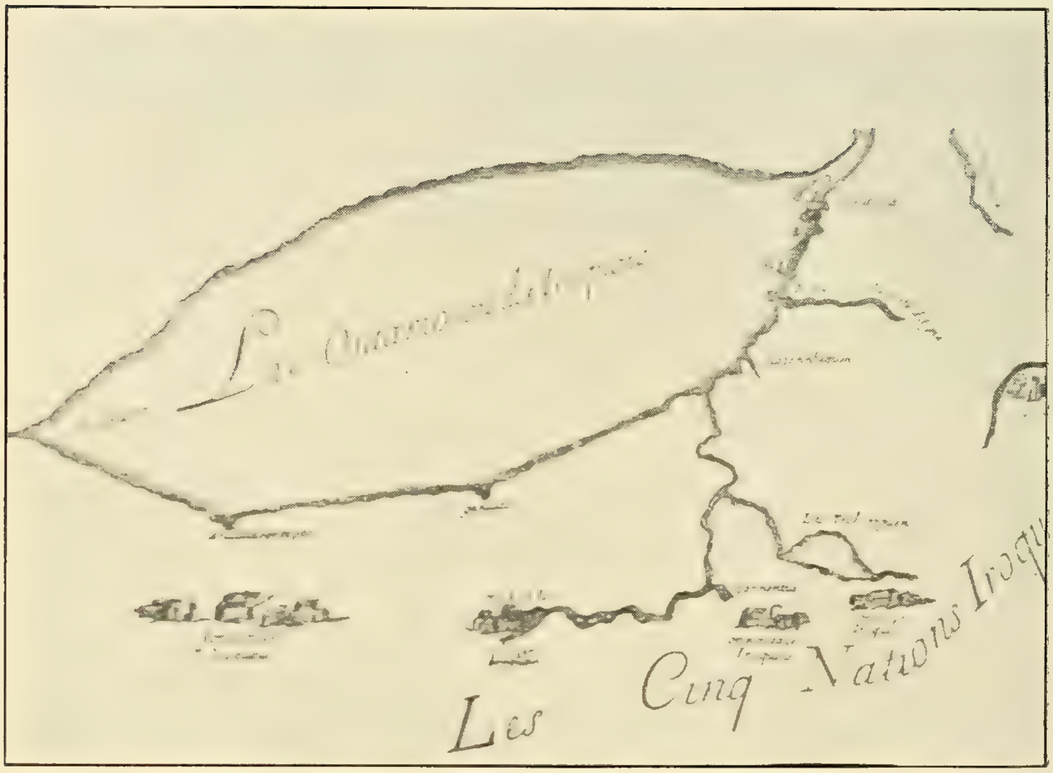
*1 Jes. Rel , Burrows ed., Vol. XLIV p 321, note 2.
*2 Doc. Hist. N. Y., Vol. 1. p 61
*3 Jesuit Relations. Burrows ed., LIII p 95.
*4 Jesuit Relations, Burrows ed., LIV, p. 79.

dougare'' (Gandougarae) was made up of captives of three nations whom the Senecas had overthrown, namely the Neuters, the Hurons and the Onnontiogas, and this village eventually became the mission of St. Michel.

In 1669 the Seneca villages were described by de Brehant de Galinee, one of the company of La Salle. (*1) He entered the Seneca country from Irondequoit and went to the great village of the Senecas. It was on the brow of a small hill in a large clearing of about two leagues in circumference, and was made up of a ''lot of cabins surrounded with palisades of poles 12 or 13 feet high, fastened together at the top and planted in the ground, with great piles of wood the height of a man behind these palisades, the curtains (cabins) being not otherwise flanked, merely a simple enclosure, perfectly square.'' Evidently it was some distance from a stream for he notes that Indian villages are usually so situated.



From Map in Jesuit Relation of 1662-1663.

In describing the Seneca country he says that it was ''composed of 4 villages, 2 of which contain 150 cabins each and the

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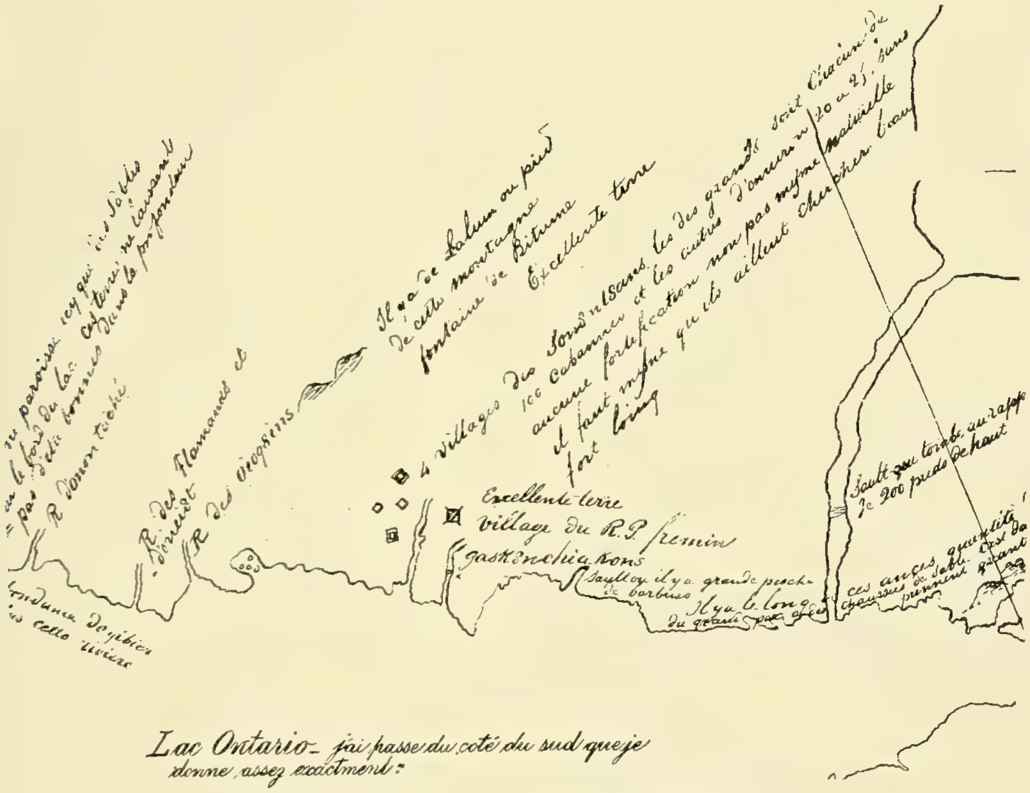
*1 Narrative of de Brehant de Galinee, trans. of J. H. Coyne. Ont. Hist Soc. Pub., Vol. IV.

other 2, about 30 cabins'' in all perhaps 1000 or 1200 warriors. The largest two were 6 or 7 leagues apart and the same distance from the lake. He visited the easternmost village. The country was beautiful, being made up of broad meadows covered with tall grass. The woods were open oak woods. A treeless condition extended for many leagues in all directions. He mentioned a ''little village half a league from the large one'' in which LaSalle left a few of his men while he went for safety to Lake Ontario. On his map he located four ''villages des Sonnontouans'', and between Irondequoit and the Genesee River, both of which appear on his map, he put the ''village des R. P. Fremin.''


Excellente terre
village du R.P. fremin
Sault qui tombe au rapport de 200 pieds de haut
Lac Ontario– j'ai passé du coté du sud que je donne assez exactement:

Map by de Brehant de Galinee, 1669-1670.

In July, 1672, Father Julian Garnier spoke (*1) of Gandachioragon and reported that Father Raffeix had arrived at La Conception. This is the last mention made of Gandachioragon.

In the Relation of 1673-74 (*2) only three villages are named, St. Michel, which was Father Garnier's mission station; La Conception, where Father Raffeix was stationed, and St. Jacques.

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*1 Jesuit Relations, Burrows ed., LVI, 59.

*2 Jesuit Relations, Burrows ed., LVIII, 233.

In 1675 (*1) it is stated that Fathers Pierron, Raffeix and Garnier labor there in three villages.

In 1677 Wentworth Greenhalgh, an Englishman, left Albany and visited all the cantons of the Iroquois. Of the Senecas he said: (*2) "The Senecques have four towns, viz. Canagora, Tiotehatton, Canoenada and Keint-he. Canagora and Tiotohatton lye within 30 miles of ye Lake ffrontenacque, and ye other two ly about four or five miles apiece to ye Southward of those. They have abundance of Corne. None of their townes are stockadoed.

"Canagorah lyes on the top of a great hill, and in that, as well as in the bignesse, much like Onondago, contayning 150 houses, northwestward of Caiouge 72 miles. ....Tiotohatton lyes on the brincke or edge of a hill, has not much cleared ground; it is near the river Tiotehatton, wch signifies bending. It lyes to westward of Canagorah about 30 miles, containing about 120 houses, being the largest of all the houses wee saw, ye ordinary being about 50 @ 60 foot long with 12 @ 13 fires in one house. They have good store of corne, growing about a mile to the Northward of the towne.

"Canoenada lyes about four miles to ye Southward of Canagorah; conteynes about 30 houses, well furnished with corne.

"Keint-he lyes aboutt four or five miles to ye southward of Tietehatton; contaynes about 24 houses well furnished with corne............"

The writer of the Relation for 1679 differed radically from Greenhalgh in his enumeration of the villages. He said that (*3) "25 leagues farther on" (from Cayuga) "are situated the three villages of the Sonnontouans."

In December, 1678, Louis Hennepin, a Récollet priest, and La Motte, two of the party accompanying La Salle in his expedition to explore the Mississippi River, were ordered by him to visit the Senecas and to obtain leave, if possible, to build a boat above Niagara Falls. They went overland from the Niagara and reached the Senecas from the west, arriving in five days at "Tagarondies," (*4) where Father Hennepin preached in the presence of Fathers Garnier and Raffeix.

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*1 Jesuit Relations, Burrows ed., LIX, 251.

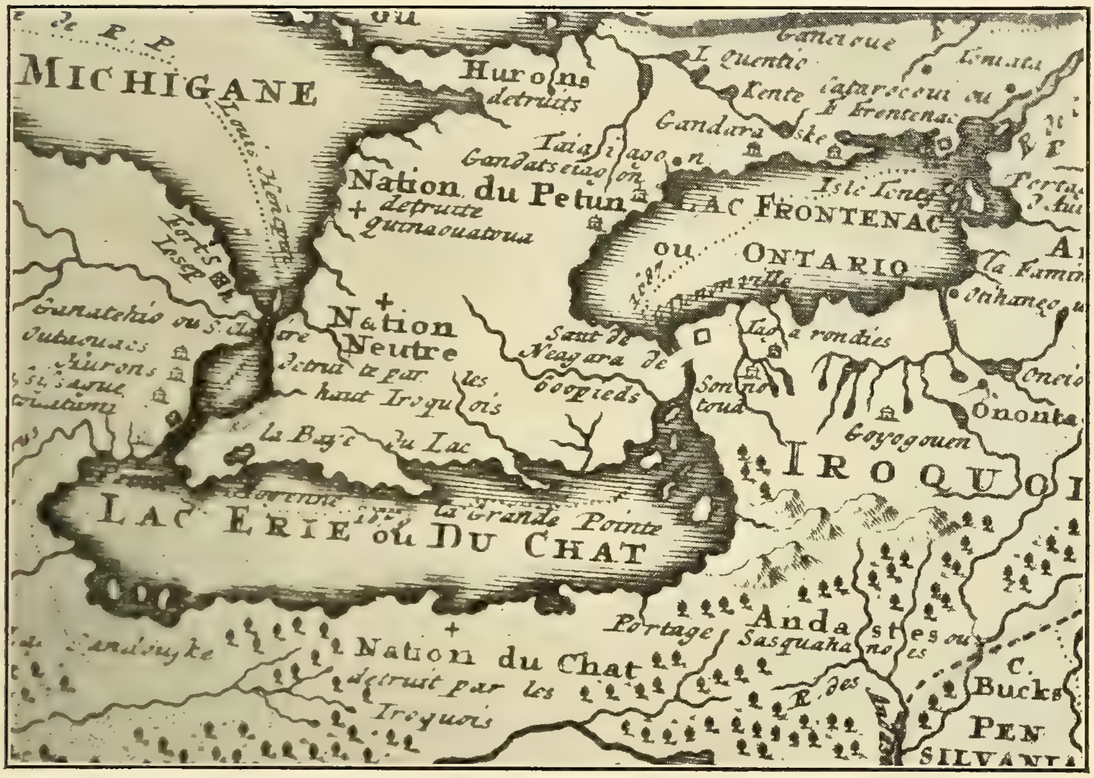
*2 Documentary History of New York, Vol. II, p. 11.

*3 Jesuit Relations, Burrows ed., LXI, 159.

*4 Hennepin, A New Discovery of a Large Country in America, Chap. XV, Thwaite.

A month later La Salle himself visited the Senecas, approaching them from Irondequoit as Galinee had done. He spent his time in the village of "Tagarondies" (*1.)

Preliminary to the punitive expedition directed by M. De la Barre, Governor of New France against the Iroquois in 1682, the Sieur D'Orvilliers reconnoitered the Seneca country and the governor stated (*2) that he had made a "faithful and exact plan" of their two principal villages. Of this no copy is available.


MICHIGANE
Hurons detruits
Gandaraske
Kente
Cataracoui ou F. Frontenac
Gandatsetiagon
Nation du Petun
+ detruite
LAC FRONTENAC
ou ONTARIO
Isle Tonty
+ Nation Neutre
detruite par les haut Iroquois
Saut de Neagara de 600 pieds
Tagarondies
Sonnontoua
Goyogouen
Onontae
IROQUOI
La Baye du Lac
LAC ERIE ou DU CHAT
La Grande Pointe
Portage
Andastes ou Sasquahanoes
+ Nation du Chat
detruit par les Iroquois
C. Bucks
PEN
SILVANIA

From Map in Hennepin's Louisianne, Nuremburg, 1687.
Marshall Library, Buffalo Historical Society.

An official enumeration of the villages was made in great detail by the Marquis de Denonville, who had succeeded De la Barre in 1685 as Governor of Canada, and who, in 1687 invaded the territory of the Senecas at the head of the most formidable punitive expedition ever sent by the French against the Iroquois. In his report he named the villages which had been destroyed by his force. He entered the country from Irondequoit and first reached "Gannagora," whence he sent an expedition to surround and capture a small fort nearby. Thence he marched to "Gannongarae, Totiakto and Gannondata," all of which he destroyed. In his report he identifies the Jesuit mission stations when he ex-

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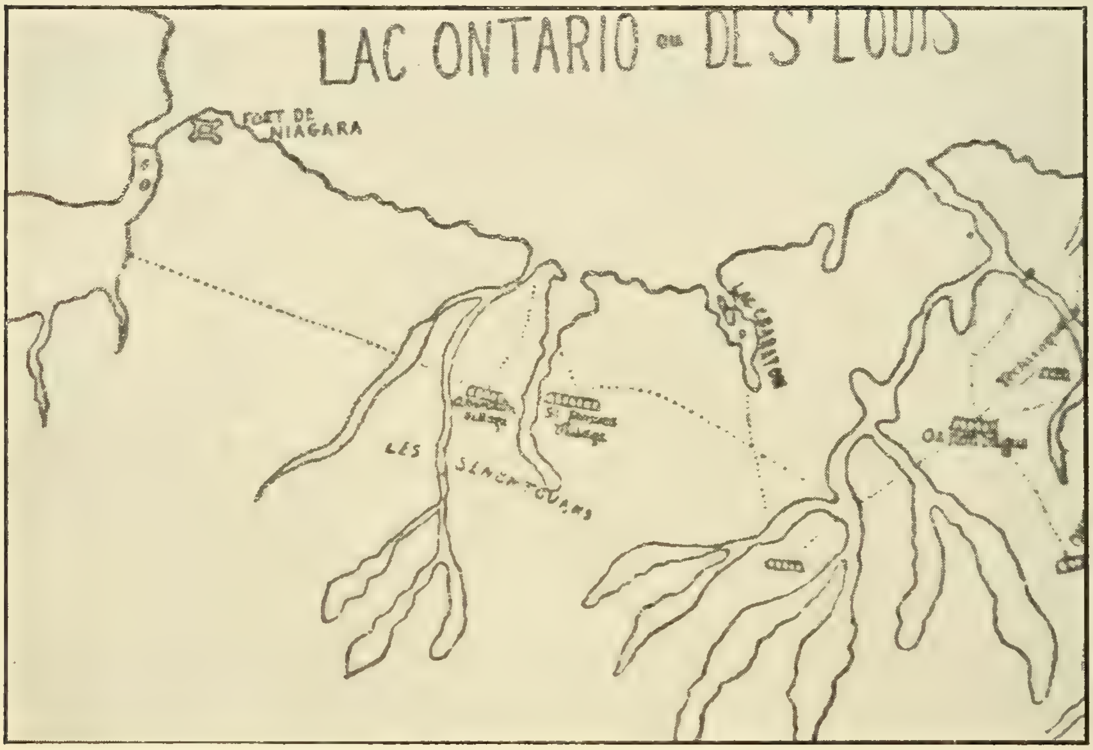
*1 Margry, Vol. 1, 127, quoted by Marshall.

*2 Doc. Hist. New York, p. 111.

pressly states that he destroyed the grain "of the small village of St. Michel or Gannogarae distant a short league from the large village" and that he encamped before "Totiakto, surnamed the Great Village of the Conception". At Gannounata, two leagues from Totiakto he found on the gates of the town the arms of England which Governor Dongan of New York had caused to be put there.

Mohawk names for these villages were given to Governor Dongan by Adandidaghko, a Mohawk, who was examined at Albany for the purpose of getting at the most authentic news of the French invasion. In it (*1) he spoke of the capture of the great Seneca town, which he called "Kohoseraghe", and of the last town, "Theodehacto".



From Map by Father Raffeix, 1688.

Abbe Belmont, in his History of New France, (*2) calls the first village seen by Denonville, "Gaensara", and states that it was situated on a high hill, and that it was "a city or village of bark situate on the top of a mountain of earth, to which one rises by three terraces." (hills). The other villages he calls "Tohaiton, Onnontague and Onnenaba".

La Hontan described the expedition under Governor Denonville and mentioned two villages. "From thence (the great village) we march'd to the two little villages of the Thegaronhies and the Danoncaritaoui which lay about two or three leagues off".

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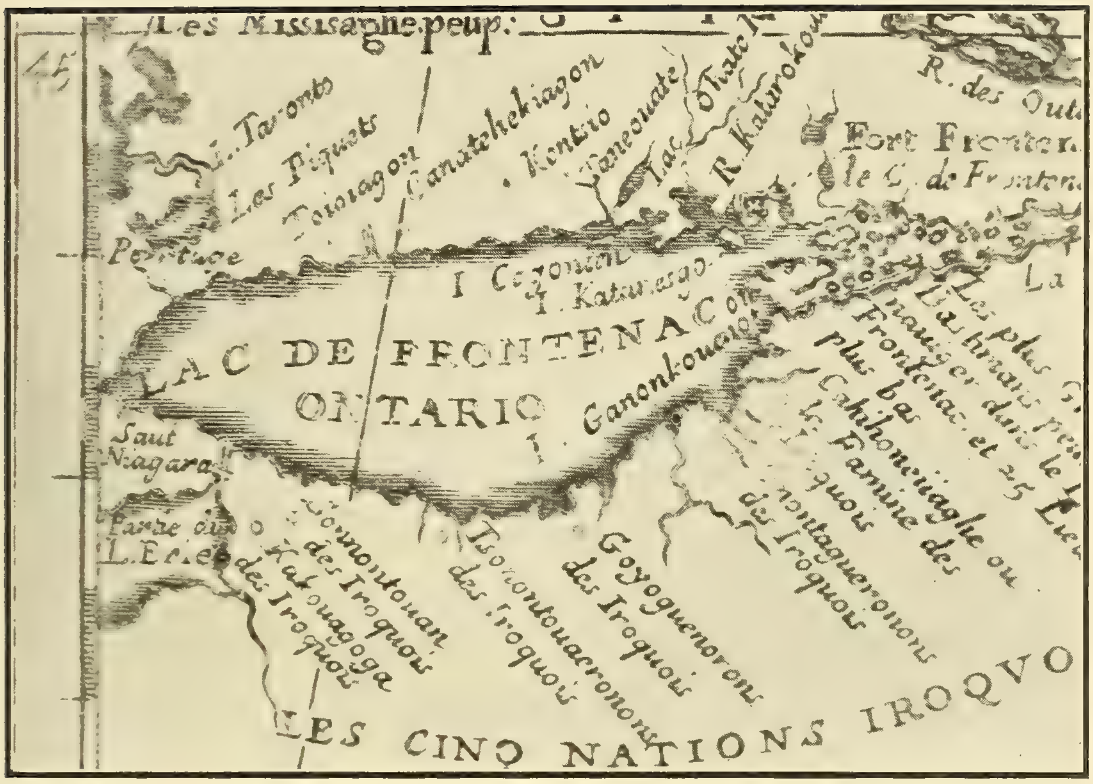
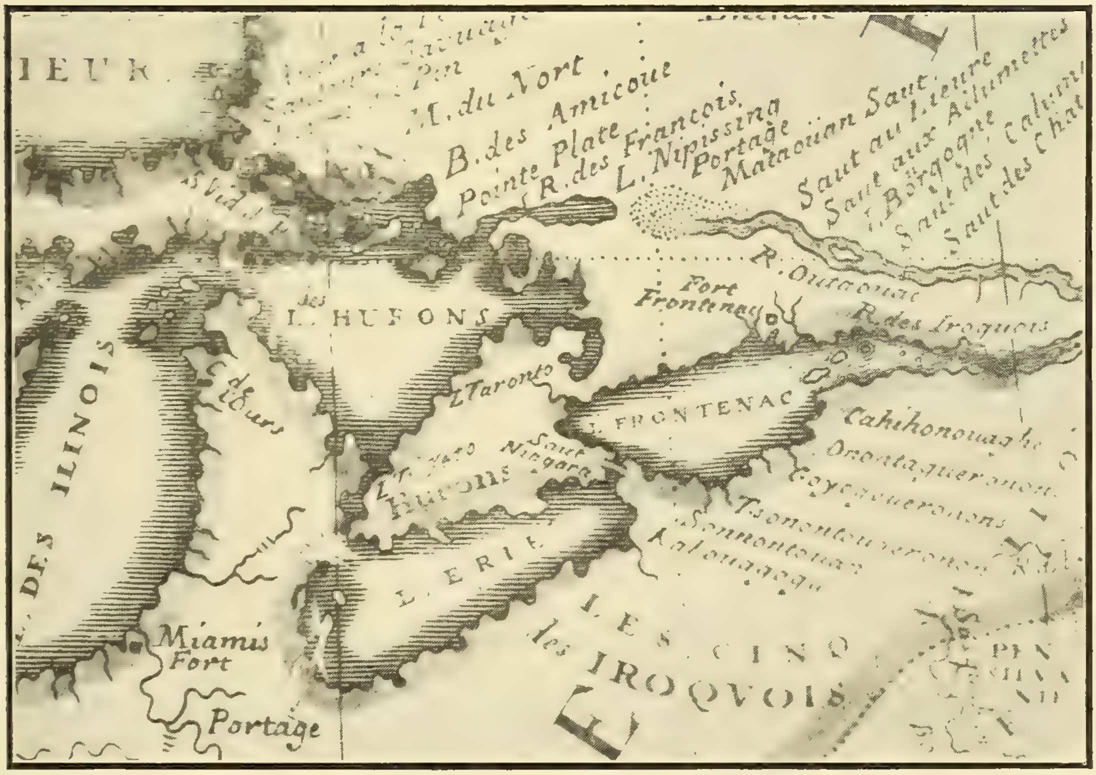
*1 Doc. Relatiug to the Colonial History of N. Y., III, 433.

*2 Quoted by Squier, Aboriginal Monuments of New York, note, p. 90.


Les Missisaghe peup.
45
L. Taronto
Les Piquets
Toiaiagon
Canatchekiagon
Kentio
Ganeouate
Lac
Ohate
R. Katarokoui
R. des Out
Fort Frontenac
le C. de Frontenac
La
Portage
I. Kataresgo
LAC DE FRONTENAC ONTARIO
I. Ganonkouaio
Les plus G
Frontenac et 25
plus ba
Cahihonouaghe ou
Famille des
Iroquois
Ontaguerononons
des Iroquois
Saut Niagara
Partie du L. Erie
Sonnontouan
des Iroquois
Katouagoga
des Iroquois
Tsonontouaeronons
des Iroquois
Goyoguenorons
des Iroquois
LES CINQ NATIONS IROQVO

From Map by le P. Coronelli, Paris, 1689.
Marshall Library, Buffalo Historical Society.


M. du Nort
B. des Amicoue
Pointe Plate
R. des François
L. Nipissing
Portage
Mataouan Saut
Saut au Lievre
Saut aux Allumettes
Saut des Chat
R. Outaouac
Fort Frontenac
R. des Iroquois
L. HURONS
L. Taronto
L. FRONTENAC
Cahihonouaghe
Onontaguerouons
Goyoguenronons
Tsonontouaeronons
Sonnontouan
Katouagoga
Saut Niagara
Hurons
L. ERIE
LES CINQ
les IROQVOIS
DES ILINOIS
C. de Ours
Miamis Fort
Portage

From Map by le P. Coronelli, Paris, 1689.
Marshall Library, Buffalo Historical Society.

A SUMMARY OF ACCOUNTS ENUMERATING AND LOCATING THE SENECA VILLAGES OF THE PERIOD BEGINNING 1657 AND ENDING 1687.

Chaumonot, two large villages and a number of small villages.

1657, Gandagan, St. Michel.

1664, Jesuit Relations, two or three villages.

1668, Fremin, four villages: Gandachioragou, Gandougarae, Gandagora named.
St. Michel=Gandougarae.

1669, Galinee, four villages and Father Fremin's village.
Eastern village was the "great village of the Senecas".
Seems to mean Gandagora by "the great village".

I670, Garnier, three named: Gandachioragon, Gandagora, La Conception.

1673, Jesuit Relation, three villages: St. Michel, La Conception, St. Jacques.

1677, Greenhalgh, four villages: Canagora, Tiotohatton, Canoenada, Keint-he.

1678, Hennepin, Tagarondies.

1679, La Salle, Tagarondies.

1687, Denonville, four villages: Gannagora, Gannongarae, Totiakto, Gannounata.
Gannongarae=St. Michel.
Totiakto=La Conception=Great Village.

1687, Adandidaghko, Kohoseraghe=Gandagora.
Theodehacto=Totiakto.

1687, Belmont, Gaensera=Gandagora.
Tohaiton=Totiakto.
Onnontague.
Onnenaba.

La Hontan, The Thegaronhies.
The Danoncaritoui

EQUIVALENTS AND IDENTIFICATIONS.

JESUITS	GREENHALGH	DENONVILLE	VARIOUS	MOHAWK
St. Michel or Gandougarae	Keint-he (?)	Gannogarae		
LaConception	Tiotohatton	Totiakto	Tagarondies The Thegaronhies	Theodehacto
St. Jacques or Gandagora	Canagora	Gannagaro	Gaensara Ganesara Tagarondies	Kohoseraghe
Gandachiragon or Gandachioragou	Canoenada	Gannondata or Gannounata	R. P. Fremin's (The Danoncaritaoui)	

The village names and their variants as given above are as they are called by the Mohawks. Their Seneca names as obtained by O. H. Marshall from "Blacksmith" are:

Gandougarae=Chi-nos-hah́-gek

Totiakto=De-yú-di-haaḱ-doh

Gandagora=Ga-ó- ǎ-eh́-gǎ-aah

Greenhalgh places "Canoenada" south of "Canagora", yet there can be no doubt that this is identical with Denonville's Gannounata, though placed south of Totiakto. Keint-he would then be Gandougarae.

Tagarondies, the "great village" might be either Totiakto, Denonville's "Great Village", or "Gannagaro", Galinee's easternmost "great village". Probably it was Totiakto, for when Hennepin approached from the west he would first come to Totiakto. The reference to a "small village nearby" might refer to the Fort Hill site and Tagarondies would then be Gandagora or St. Jacques.

Gandachiragon cannot be identified. It may refer to "Father Fremin's village" of Galinee, the site of which has not yet been found, or if found, has not been connected with this name, though it is so definitely placed on Galinee's map, away from the group of four villages, and near the Genesee that a village should be looked for near West Rush or thereabouts. Gandachiragon may be Gannounata, and probably was. It certainly was not Gandagora, Gandougarae or Totiakto, for these are all named in connection with it.

The Danoncaritaoui mentioned by La Hontan evidently means the village of the chief Onnonkenritaoui who was mentioned by Father Garnier in 1672, as being the most influential chief of the Senecas. He lived at Gandachioragou, so that this village is the same as La Hontan's ''Danoncaritaoui''.

Belmont says that in Onnenaba dwelt ''Ganonketahoui, the principal chief''. Onnenaba and Gandachioragou are therefore identical.

Danoncaritaoui was evidently the chief named in the ''Song called the Roll-call of all the Chiefs'' as it appears in the Mohawk version in Beauchamp's ''Councils and Ceremonies of adoption of New York Indians'' (page 377) as Ka-non-ke-rih-da-wih.

''Hail, hail. They who were his cousins.
Hail, hail. These two guarded the doorway.
Hail, hail. Thou, Ka-non-ke-rih-da-wih.
Hail, hail. With his cousin
Hail, hail. Thou, De-yoh-nin-ho-ka-ra-wenh.''

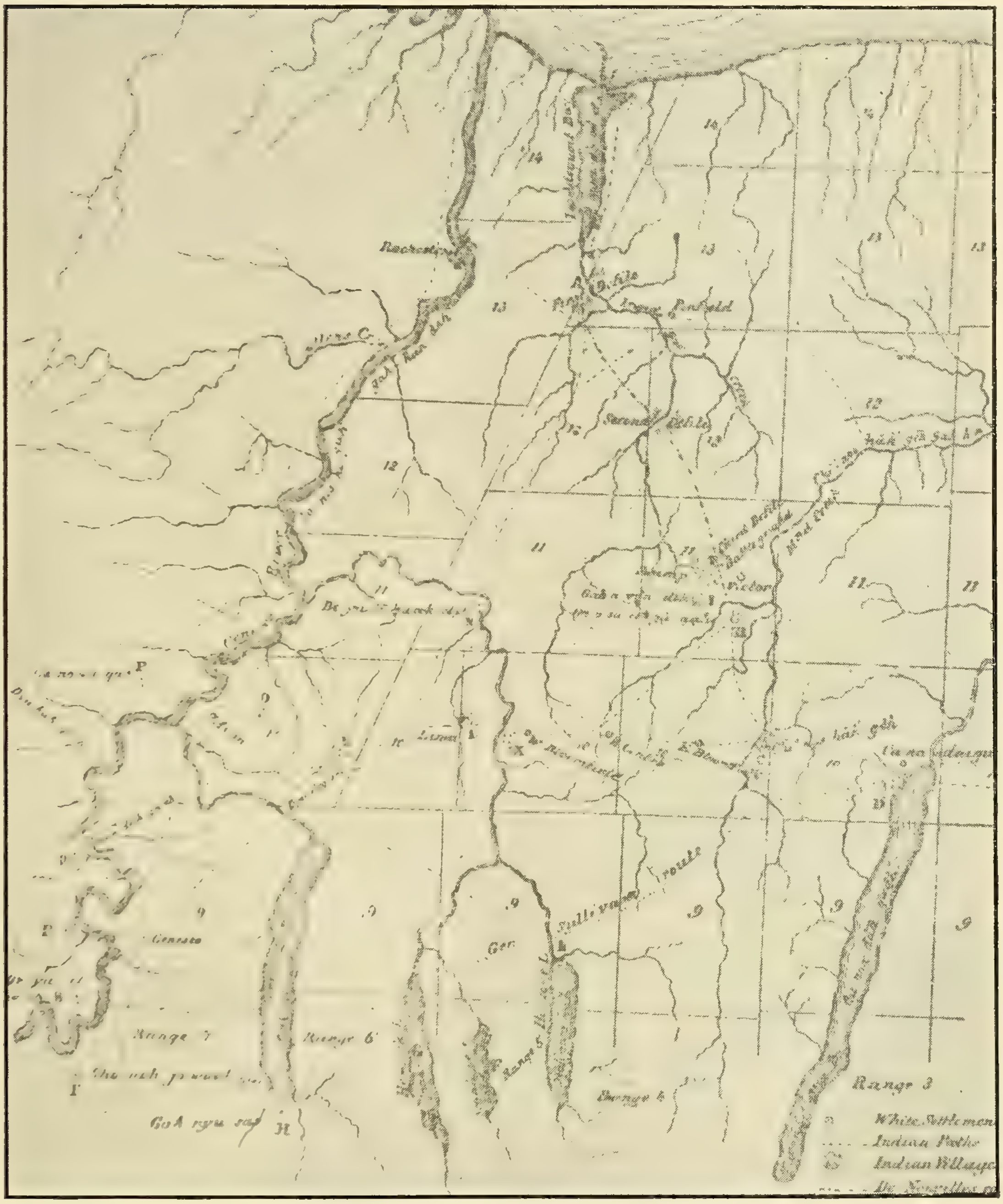
In Hale's Iroquois Book of Rites these appear as Kanonhkehihtawih and Tyuhninhohkawenh.

Marshall calls the two chiefs, De-ga-o-yes and Ga-noh-ga-ih-da-wih.

It is possible that ''the Thegaronhies'' is identical with ''Deyoh-nin-ho-ka-ra-wenh,'' in which case the two villages of ''Onnenaba'' and ''Tagarondies'' were the villages of the two ''door-keepers''. Onnenaba is probably an Algonkin word or it may be Belmont's spelling of the unfamiliar Iroquois name of Gannounata. In that case Gandachioragou would be Gannounata and Tagarondies would be Totiakto.

As late as 1776 these names occur on Governor Pownal's map, Penn. Archives, Vol. II. On it are three Seneca villages, viz.: Chenandoanes and Tegaronhies on the west bank of the Genesee River and Danoncaritow on the east bank.

Mr. Marshall is probably correct in locating these sites. Gandagora was on Boughton Hill, south of the village of Victor, in Victor township, Ontario County. Gandougarae was on the Marsh farm, in East Bloomfield, two miles northeast of Holcomb.



Map of that part of the Genesee Country invaded by the Marquis de Denonville, in 1687, from Historical Writings by O. H. Marshall.

An earlier or later Gandougarae may have been on the Appleton farm, a mile west of the preceding site. Totiakto was undoubtedly on the Kirkpatrick farm at Rochester Junction, in the township of Mendon, Livingston County. The site on the Dann farm, Honeoye Falls, claimed to be the Totiakto of 1687, was either a later site, occupied by the homeless community of Totiakto, after 1687, or Gannounata.

Besides the sites thus identified as being those of the historic Seneca towns of this period, there are in the Genesee valley several other sites which cannot be identified. One on the Shattuck farm at Factory Hollow, on Honeoye Creek, near West Bloomfield, and another on the same creek near West Bloomfield station are the sites of large communities. At Factory Hollow I found deep refuse heaps, containing Stone Age articles, and judging only from the plates in Mr. Beauchamp's publications of articles found there, I believe that it was inhabited earlier than either the Rochester Junction or the Victor site. Probably the same community occupied it which later lived on the site at West Bloomfield station. These two locations are probably those of villages inhabited successively by the people who finally built on what is now the Kirkpatrick farm, the large bark village described by Greenhalgh as Tiotohatton, and burned by Denonville. Yet either one may have been Gannounata, Gandachioragou, or Father Fremin's village.

The country of the Senecas was described in 1657 by the Jesuit missionaries as being the most fertile and populous of all the Iroquois provinces, and as containing two large villages and a number of small ones, besides the Huron town of St. Michel. Father Chaumont (*1) visited the country and preached there in 1657, but after a very brief stay he returned to the lower Iroquois. At that time the Senecas were in touch with Dutch traders from Fort Orange or New Amsterdam, and had been for at least twenty years, probably longer. They were acquainted with the French, too, for the Directors of the Dutch West India Company wrote in December, 1656, to Director General Peter Stuyvesant at New Amsterdam that a Jesuit and some Frenchmen were in the "Sennequens'" country. (*2)

In September, 1664, New Netherlands was surrendered to England and its administration was given into the hands of Sir Richard Nicolls, an adherent of the Duke of York. Immediately after his assumption of office he sent Colonel George Cartwright

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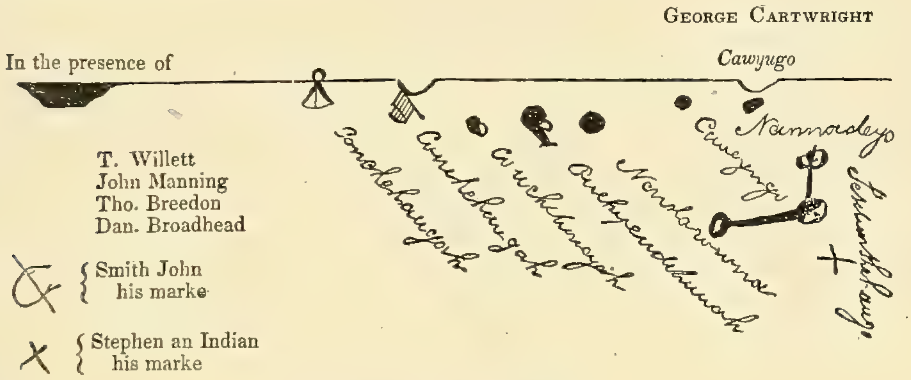
*1 Jesuit Rel. XLIV, 21.

*2 Doc. Rel. Col. Hist. N. Y., Vol. III, 68.

to negotiate with the Iroquois. On September 24, 1664 Colonel Cartwright made a treaty with various "Sachamackas" of the Mohawks and Senecas, in which it was agreed that the Indians were to have all wares and commodities from the English as they had previously from the Dutch; and that offences by English against Indians or vice versa be punished. The treaty was signed for the Senecas by Anaweed, Conkeeherat, Tewasserany, Ashanoondah. (*1)


George Cartwright
In the presence of
Cawyugo
T. Willett
John Manning
Tho. Breedon
Dan. Broadhead
Smith John his marke
Stephen an Indian his marke

Signers of the Treaty.

Mr. Beauchamp claims two of the four are Cayugas and Onondagas.

A month later, October 13, 1664, Sir Robert Carr wrote Governor Nicolls from the "Delawarr Fort" asking him "to assist uss in ye reconciliacon of ye Indians called Synekees at ye Fort Ferrania and ye Huskchanoes here, they comeing and doeing much vyolence both to heathen and christian". This refers very evidently to the war with the Andastes or Susquehannocks which was then in operation.

In December, 1665, a treaty of peace was made between Alexander de Prouville, Chevalier Seigneur de Tracy, who was newly appointed governor of New France, and six Onondaga chiefs, who signed it on behalf of the three upper cantons of Iroquois, viz.: the Senecas, Cayugas and Onondagas. This treaty was arranged by Garakontie, a noted Onondaga, and was the result of the alarm felt by the Iroquois at the preparations made by de Tracy to invade their country. The Iroquois humbly begged forgiveness and asked for two Jesuits and some French families and promised to make peace with the Algonkin and Huron allies of the French. (*2)

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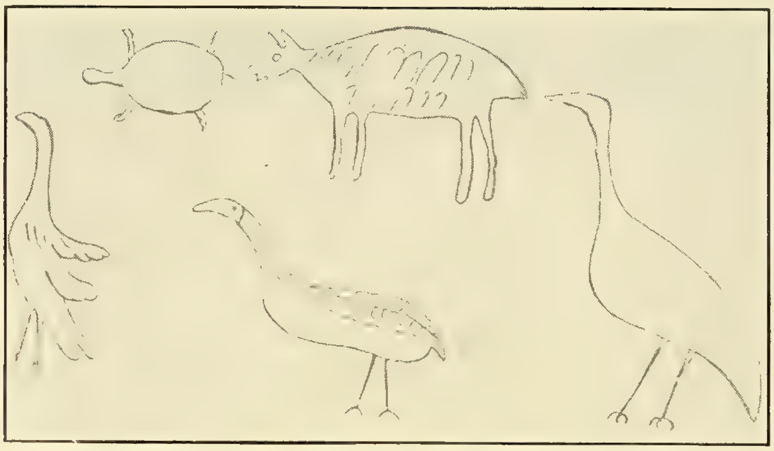
*1 Doc. Rel Col. Hist. N. Y., Vol. III, 68.
*2 Doc. Rel., Col. Hist. N. Y., Vol. III, 121.

The next spring, May 22, 1666, the Senecas sent ambassadors to Quebec, who ratified the treaty of December, and asked for Frenchmen to live amongst them and for help against the Andastes.

The treaty was signed by the following: Garonheaguerha, Saga8echistonk, Osend8t, Gachioguentaxa, Hotiguerion, Ondeg8aronton, So8enda8en, Tehaoug8echa8enion, Honag8est8i, Tehonneritague, Tsohaien. Their orator was Garonheaguerha. (*1)



Marks of the Tribes affixed to the Treaty of 1666.

Jacobus Fremin S.J.

In 1668, the Senecas asked the French at Quebec for missionaries, and in answer to their appeal, Father Jacques Fremin, Superior of all the missions to the Iroquois, left Agniez, the Mohawk canton, to carry the Gospel to Tsonnontouan. In November, 1668, he reached Sonnontouan where he was well received "with all the honors usually given to Envoys". The sachems had a chapel built for him and the people seemed desirous of becoming Christians. The Huron captives,—evidently those of St. Michel—had especially "great affection for the Faith". Father Fremin baptized in four months sixty dying persons of whom (according to the Father) thirty-three went to Heaven. The "jugglers" still had a great hold over the people, who prayed to God, however, to favor them in their war against the Outaouacs, which was then raging. The Loups or Delawares and the Andastes were also active enemies of the Senecas and war parties were out against these nations. Father Fremin endeav-

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[*1] Doc. Rel., Col. Hist. N. Y., Vol. IX. 45.

ored to negotiate a peace, and he seems to have been more or less successful, for a Frenchman who had been amongst the Senecas brought news to Quebec that the priest was then actually on his way with ambassadors to ratify the peace. His work as a missionary was greatly increased, though in many ways simplified, by an epidemic which raged that year in the towns.

The year 1669, brought a visitor of note and an increased activity in missionary effort. Owing (*1) to the increase of work due to the epidemic, Father Fremin found it impossible properly to care for his flock and called for aid on Father Julian Garnier, then stationed at Onondaga. Upon his arrival he was sent to Gandachiragon where he built a chapel. Father Fremin continued his work amongst the Hurons of St. Michel.

Julianus garnier

The village of St. Michel or Gandougarae, was at that time composed of the remnants of three nations which had been overthrown by the Senecas, namely the Neuters, the Hurons and the Onontiogas. The Hurons were the remnants of the village of Scannonenrat which, during the Huron war, twenty years before, had surrendered to the Iroquois, and whose people had been scattered amongst the cantons. These Hurons had been ministered to by the Jesuit missionaries stationed in Huronia, and Father Fremin was gratified beyond expression in finding that after twenty years of exile amongst the pagan Senecas, forty still held to the Faith.

The war with the Andastes continued during the year, and two captives were burned in Gandougarae, after their baptism by the priest.

In August, 1669, during the absence from Sonnontouan of both the priests, who had gone to attend a missionary conference of all the Jesuits ministering to the Iroquois, called by Father Fremin as Superior to meet at Onondaga, the villages were visited by two noted men, one a Sulpician priest, Rene de Brehant de Galinee, and the head of the expedition of which Galinee was a member, no less a personage than Robert Cavalier, Sieur de La Salle.

The Sieur de La Salle was anxious to explore to the southward, where, so he had heard, was a great river flowing to the South Sea. He hoped to obtain from the Senecas a guide from

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*1 Jes. Rel., LIV, 79.

amongst their many captives, taken by their war parties in the South, and to obtain this guide he had planned to visit them in their homes. (*1) His party landed at Irondequoit, August 12, 1669. Here they met Indians who proved to be friendly, and gave them berries and other wild fruit, in return for which the visitors gave presents of knives, awls, needles and beads. The same day La Salle, with Galinee and others of his party, escorted by a large number of Senecas, set out for the great village of the Senecas.

The village was in the midst of a large clearing about two leagues in circumference. It was situated on the brow of a small hill. Outside the village were seated a large number of old men, one of whom gave an animated speech of welcome. The introducer of ambassadors then led them to the largest cabin of the village which had previously been prepared for the use of their distinguished guests. Here they were given over to the care of the women of the cabin who were instructed to give them every attention.

The village was "a lot of cabins surrounded with palisades of poles, 12 or 13 feet high, fastened together at the top and planted in the ground, with great piles of wood the height of a man behind these palisades, the curtains (cabins) being not otherwise flanked, merely a simple enclosure, perfectly square". Evidently it was some distance from a stream for as before mentioned Galinee noted that Indian villages were usually so situated.

The principal persons "of the other villages" arrived the same day to attend council. This met in La Salle's cabin and was composed of fifty or sixty of the principal persons of the nation, who sat regardless of rank in any vacant place, and smoked throughout the meeting. As interpreter they called upon Father Fremin's man.

The council being opened in due form La Salle made a speech in Indian fashion, giving to emphasize his points three presents. The first was a double barrelled pistol. The second, of kettles, axes, knives and glass beads, was followed by the third of two capotes, and more axes, knives and beads. The object of the meeting was then introduced in his request for a Touguanha (Shawnee) slave to guide him and his party to the Ohio River.

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*1 Narrative of de Brehant de Galinee, translation of J. H. Coyne.

As usual the answer was deferred until the next day, when the council met again. First the leading sachem welcomed the French party to their country and in witness gave a wampum belt. A second belt assured peace with the French, and promised a slave as soon as one had returned from Albany, whither some had gone with a trading party.

For a week La Salle's party awaited the return of the expected guide and during that time they had ample opportunity to become acquainted with the customs of their Seneca hosts. They were fed upon dog, singed over the fire to remove the hair, and roasted, together with corn meal served with bear's grease and sunflower oil, from platters which were extremely filthy. Drunkenness they noticed and noted with anxiety that a drunken man was not accounted responsible for any of his acts, even murder being committed safely by anyone really or supposedly intoxicated.

They had an excellent opportunity also to observe the torture of a captive, and incidentally to learn the value of a Seneca promise. A young captive, eighteen or twenty years old, of a southern tribe, had been given to an old woman in place of her son who had been killed. She had refused to adopt him, and as usual in such cases, he was to be tortured. To obtain him as a guide Galinee offered presents to the woman in an effort to buy him, and failing, tried to persuade the sachems to keep their promise and give him as a guide but nothing could change them.

The day was one of anxiety for the French party. Disappointed and chagrined by their failure to obtain a guide, they were now exposed to the actual danger of attack during the excitement of the occasion by infuriated Senecas, all more or less under the influence of rum. For safety, La Salle sent his men to a small village half a league from the large one, and went in company of Galinee to the shore of the lake, presumably Irondequoit. Some of his men were curious to see a prisoner tortured and stayed in the village.

The young captive was first tied to a scaffold, where the torture was begun by applying red hot gunbarrels to his feet and body, continuing until the skin of his entire body had been burned. He was then removed from the scaffold and forced to run the gauntlet between two rows of Indians armed with burning brands. When he fell, buckets of hot coals were thrown upon him. Finally he was killed with a stone, and his flesh distributed and eaten. In the evening every one assembled "in the square" each with a stick with which they beat the bark cabins with a great clatter to drive away the dead man's spirit which might have been lurking about with evil intent.

Soon after, La Salle, hopeless of obtaining help from the Senecas embarked his party at Irondequoit and sailed away to the western end of the lake. His meeting there with Joliet, just returned from his journey with Marquette to the Mississippi, the division of the party, how Galinee with a part of the expedition kept on towards the west, and how La Salle returned, have nothing to do with the Senecas. There seems little basis for the statement of Parkman that later, possibly in the same year, he actually did obtain a guide, presumably from the Senecas, and discovered and explored the Ohio River.

La Salle's party had barely gone when Father Fremin and Father Garnier returned from their Onondaga conference. On the way to Gandachiragon they stopped at "Gandogare" where a drunken Seneca seized Father Garnier and attempted to stab him. A woman interposed and saved his life. He was assigned to Gandachioragou, there to stay until he learned the language, and Father Fremin took charge of the three other villages.

The priests found that in their absence many of the Senecas had left their villages. Some had gone to the south to fight the Touaganhas. Others had taken their families to the desolate wilderness north of Lake Ontario, there to hunt beaver. Many of these expected to be absent for nine months and had prepared themselves for their prolonged absence by drinking to madness.

Father Fremin while in Gandougarae lodged in the cabin of one of the most influential men of the pagan party. His chapel was opened on the first of November, and was crowded with worshippers. He stayed here but a few more months, for some time during 1670 he left the Seneca mission, and his place was taken by Father Garnier. (*1)

At some time during 1670 the village of Gandougarae was entirely destroyed by fire, nothing being saved. The inhabitants promised that as soon as they had rebuilt their cabins and palisades they would build a chapel, but Father Garnier was bound to admit that they were very adverse to espousing the Faith.

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*1 Jesuit Relations, Burrows ed., LV, 75.

The wars with the Ottawas and the Andastes were still being pushed vigorously, but this year (or the next) the Senecas met with a reverse at the hands of the Andastes, and that in a most humiliating fashion. A war party of forty Cayugas and twenty Senecas had gone out against them and were returning in canoes in two divisions. Sixty Andaste boys overtook the rear division and routed it and immediately followed up their victory by pursuing and overtaking the advance division which they attacked so vigorously that it fled. Eight Cayugas and a Seneca were killed and many were wounded.

Raffeix J.

In 1672 Father Pierre Raffeix, who had taken the place of Father Carheil at Cayuga, was assigned as helper to Father Garnier at Sonnontouan, and when he arrived there, was given the mission of La Conception at Totiakto.

Meanwhile the Christian party was not increasing. Father Garnier reported (*1) that the sachems of Gandachioragou had declared in council that they wished to adopt the custom of praying but that rumors of war with the French had embittered them and their hostility had been increased through stories told by a Cayuga. He had stated that of the families who had become Christians not one was left alive, and that the black-gowns were really spies of Onontio, the French governor at Quebec who had sent them there to kill off the Senecas by sorcery. These stories had the desired effect. Garnier's life was threatened and he was warned that if the French invaded Sonnontouan he would be brained. His host, Onnonkenritaoui, the most influential man in the nation, wished only to kill him because of the frequent sickness of his favorite niece, brought on, he thought, by the evil designs of Garnier. Christianity fell into disfavor, yet Garnier reported that he knew of nearly two hundred pagan families who lived upright moral lives. That Garnier was an agent of the French government is made plainly evident in a letter to the Governor in which he stated he had made known to the Senecas the orders which La Salle had brought. (*2)

The mission of St. Jacques at Gandagora was still in 1672 without a chapel or a resident priest. (*3) Many of its people

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*1 Jesuit Relations, Burrows ed., LVI, 57.

*2 Jesuit Relations, Burrows ed., LVIII, 27.

*3 Jesuit Relations, Burrows ed., LVII, 191.

came for worship to the new chapel of St. Michel at Gandougarae, now rebuilt after the fire. To fill the evident need of a spiritual guide in so large a community, Father John Pierron was sent to the Seneca country "to take charge of a large village", where in 1676 he baptized ninety persons, nearly all dying children. (*1)

Notwithstanding frequent baptisms by the priests, the Christian Faith was falling more and more into disfavor. The Senecas had defeated their troublesome enemies, the Andastes, in 1674 or 1675, and as a consequence, were more than usually insolent and overbearing, threatening even to make war upon Canada. A hired assassin was to have killed Father Garnier, but his plans miscarried. The next year the priests were in constant danger. Drunken Senecas pursued them with hatchets, overturned and destroyed their chapel, and in all ways persecuted them almost beyond endurance. An epidemic of influenza, with a great mortality increased the misery. But, as usual in the epidemics, the harvest for the Faith was correspondingly large. Father Garnier baptized forty children and fourteen adults, all of whom died immediately afterward. Sixty children died in one month in La Conception, (Totiakto). (*2)

Insolent as the Senecas were toward the French, they seemed to have little animosity towards their English neighbors at Albany. In 1677, their country was visited in a friendly manner by Wentworth Greenhalgh, the first and for many years the only Englishman to leave a written record of first hand observation of Seneca life and customs. (*3)

Mr. Greenhalgh left Albany May 20th, 1677, to visit the cantons of the Iroquois. He passed westward through the villages of the Mohawks, Oneidas, Onondagas and Cayugas, finally reaching the villages of the "Senecques". He reached Albany on his return on July 14th of the same year. While there is no record of the purpose of his journey, it was evidently an official one, probably to ascertain the fighting strength of the Iroquois, for his report is of the scantiest nature, giving a few details only of the location of the towns or "castles" of the different nations, with an estimate of the number of their warriors. In "Cana-

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*1 Jesuit Relations, Burrows ed., LIX, 77.

*2 Jesuit Relations, Burrows ed., LX, 175.

*3 Doc. History of New York.

gora" and "Tiotohatton" he witnessed the torture of captives, part of fifty prisoners taken in the South and just arriving at the Seneca towns. Either he did not meet the missionaries or neglected to report their presence, and it is curious to note that his visit was not mentioned in their reports. It is possible that they mutually ignored each other. Greenhalgh's statements do not always agree with those of others. For instance, he states explicitly that the Seneca towns were not stockaded, yet Galinee, a trained and unusually accurate observer described only seven years before, the palisades of the town in which he stayed and the priests spoke definitely of the palisades about the new town of Gandougarae or St. Michel. Gandagora was so defended, as witness the earth-works still existing as late as Squier's time. Greenhalgh mentioned one of the towns as "Canoenada". Substituting the French G for the English C we have the French name Ganoenada, or as Denonville wrote it "Gannounata". But Greenhalgh placed his town south of "Canagora" and Denonville placed Gannounata south of Totiakto.

The war with the Andastes came to an official end in 1677. In 1673, the Senecas had begged Count Frontenac for help to fight the "Andastoguez the sole enemies remaining". In August, 1677, Colonel Coursey was instructed that "four castles of the Senecas were still on the war-path against the Susquehannas". (Andastes) (*1) Many of the Andastes had surrendered themselves to the Senecas and others of the Iroquois and had gone, some voluntarily, some by force, to Sonnontouan and the other cantons. A party of Andastes had fled to the Senecas after killing some Virginia and Maryland settlers.

It seems entirely probable that both the Andastes and the Delawares had formally submitted to the Senecas at a conference which was held at Shackamaxon, March 14-18, 1677. (*2.)

In September, 1678, the Governor of Maryland wrote Governor Andros of New York that the Senecas were molesting both Indians and Christians in that province. In reply Governor Andros doubted that the Senecas would do such a thing "having always been very good and faithful to this Government". But four years later, August 3, 1682, the Senecas were

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*1 Proceedings Maryland Council, II, 243.

*2 Minutes of Court of Upland (Chester), Pa., Mar. 13, 1677.

called to Albany to meet two Maryland Commissioners, Henry Coursey and Philemon Lloyd who signed a treaty of peace with them on behalf of Maryland and the Indians dependent on it. The Seneca signers were: Adondareicha, Degonhondie, Kaneendodo, Sockkadowanne, Anooskaheiko, Soniadoway, Panotohaio.

The year, 1678, was made noteworthy by the fact that then for the first time, the shadow of the Seneca Nation fell athwart the French plans for an imperial domain in America. In May of that year, Louis XIV of France, influenced by the enthusiasm of La Salle's friends, gave him gracious leave to "labor at the discovery of the western parts of New France" and furthermore to "build forts at such places" as he thought necessary. For La Salle this was the first step toward the realization of his great plans, a beginning toward which was to build a fort at Niagara. As this was in territory belonging to the Senecas, he must first of all obtain their permission.

In December, 1678, La Motte de Lussiere, and Louis Hennepin, the latter a priest of the Recollets, both attached to La Salle's party, left their temporary base at Niagara and visited the country of the Senecas, under orders from La Salle to obtain the desired permission. They came overland and therefore entered Sonnontouan from the west. They were entertained at one of the great towns, called by Hennepin, "Tagarondies"' where he preached in the presence of Fathers Garnier and Raffeix, the resident missionaries. La Motte convoked a council of forty-two sachems. The two Jesuits came to this council, but La Motte was suspicious of their designs and requested the sachems that they be excluded. Hennepin withdrew with them, "to bear part of the affront" as he said, or perhaps to be sure that they did not eaves-drop.

The council was conducted in Indian fashion by La Motte, through Anthony Brossard, interpreter. First, he was come to smoke in amity with the Senecas. Second, the French wished to build a great canoe above the Falls of Niagara. Third, the French were willing to provide a gun-smith and a blacksmith at Niagara for the convenience of the Senecas. At the end of his first period, in token of the friendship of the French, he gave a present of axes and knives, a great belt of white and purple wampum, and some gowns. His offer of a smith he emphasized by a gift of more gowns and some fine cloth.

The sachems answered the next day, using as guides small pieces of wood and the French presents. Their answer was probably unsatisfactory, for Hennepin, who described the proceedings, failed to give the text of their reply.

The permission of the Senecas thus withheld was absolutely necessary to La Salle. As soon as their refusal was reported to him, he set out for the Seneca country. He entered their country from the lake shore, where he found at the mouth of the Genesee River some Franciscan priests, trading guns, knives and brandy, for furs and supplies. (*1) He seems to have reached the main Seneca village in January or February, 1679, and to have called a council at which the chiefs gave him the necessary permission to build a fort at Niagara and a vessel above the Falls. Both these enterprises were rushed forward at once and were watched with suspicion and anger by the Seneca hunting parties scattered along the river. Once a Seneca, pretending drunkenness, tried to kill a French blacksmith at work on the vessel, but he was attacked vigorously with an iron bar and driven away. A Seneca woman alarmed the boat-builders by telling them of an intended attempt to burn the boat, but their plan, if there were one, failed. Many Senecas witnessed the launch of the Griffon, and their excitement and wonder at its size and its sails have been recorded by Father Hennepin. The French post at Niagara erected for the convenience of the Senecas was destroyed by fire a few months afterward, and so far as we know, the smiths who were promised failed to appear.

The feeling amongst the Senecas of opposition to the French, recorded by Father Hennepin, seems to have increased during the year 1679. Whether because of the adverse influence of La Motte and Father Hennepin, who disliked and distrusted the Jesuits, or because of the continued successes against their enemies, the Senecas treated the missionaries with constantly growing insolence. In a council it was recommended that they be killed and their executioners were appointed. Though this sentence was deferred the priests were constantly assaulted and their chapels were repeatedly demolished. Drunkenness was on the increase amongst all the people. The men were constantly drunk, and while intoxicated committed with impunity the wildest crimes. The women, also, who previously had not been

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*1 Buff. Hist. Scc. Pub., Vol. I, p. 273.

addicted to drink, now frequently drank to excess. Even children of ten or twelve years of age were often seen intoxicated. During the commotion caused by the frequent drunken bouts the priests hid in their chapels, though even there they were not always safe.

The Maryland Council learned in August, 1681, from an Onondaga and a Cayuga that "another nation called the Black Mingoes are joined with the Sinnodowannes who are the right Senecas". (*1) Who these "Black Mingoes" were is unknown. The Senecas were called by the Maryland settlers "Mingoes".

Lefebvre delabarre

In 1683 it seemed as though the insolence of the Senecas was to be punished and their arrogance curbed, when M. de La Barre Governor of Canada made plans to invade their country. In 1682, Frontenac had been superseded as governor of New France by Le Febvre de la Barre, an old naval officer. He proved to be unscrupulous and grasping in illicit trade with the Indians, but timid, vacillating and weak in his treatment of them. In 1683, news came that the Senecas intended to attack the Illinois, Ottawas and Hurons then grouped about Michilimackinac as a base. As this would have cut off much of the Governor's private trade he was naturally much alarmed and begged the King for troops to attack the Senecas in their country. A council with the Iroquois sachems at Onondaga resulted only in a truce, which was of so little account to the Senecas that they did not scruple to board a vessel of La Barre's at anchor at Fort Frontenac and help themselves to a quantity of goods and brandy. In the council the Iroquois had been told specifically that they might plunder any French traders who were "without permission" from the Governor. This was intended to give them the opportunity to plunder La Salle, but a Seneca war party operating in the Illinois country in the spring of 1683, met one of La Barre's own parties, and failed to distinguish between La Salle's party "without permission" and De la Barre's traders with permission and so seized their goods and made the party prisoners. La Barre was furious, and began at once to plan to invade the Seneca country at the head of a force large enough to compel respect.

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*1 Maryland Archives, XVII, 5.

During the three or four years preceding these events and while the attention of the Senecas was turned to the tribes west of Lake Michigan, the Lower Iroquois had been warring with the nations to the southward and in the numerous frays had killed and plundered settlers of Virginia. In 1684 Lord Howard of Effingham, then Governor of Virginia, held a council with the Iroquois at Albany. After the business of the meeting had been conducted, Governor Dongan of New York laid before them a message which he had received from De la Barre in which he informed the English Governor that a Seneca war party had plundered French canoes and that he intended to attack them in their castles. Dongan was the shrewdest diplomat that New York had had up to that time, and in reply he naturally made use of this opening to assert the sovereignty of the English over all the cantons of the Five Nations and to warn De la Barre not to invade English territory. He then laid the whole message before the council, thus warning the Senecas of the intended attack. The whole council was disturbed and not a little alarmed, and the astute governor made use of this alarm to induce the Iroquois not only to acknowledge the King of England as their sovereign, and put themselves under the protection of the Duke of York, but to allow the governor, for their greater safety, to place in their villages the arms of the Duke of York. That this acknowledgment really amounted to nothing Dongan seems to have understood clearly, and to induce the Iroquois to make their subjection a fact, rather than a name, he promptly sent as envoy to the Onondagas, a Dutch interpreter, one Arnold Viele.

The Onondagas were at this time more inclined to be friendly with the French than the Upper Iroquois. This friendliness was due, partly at any rate, to the presence in their towns of two French envoys, both of whom were known to the Onondagas and trusted by them, namely Charles le Moyne and Jean de Lamberville. These so played upon the feelings of the Onondagas that they consented to act as peacemakers between the Senecas and the French.

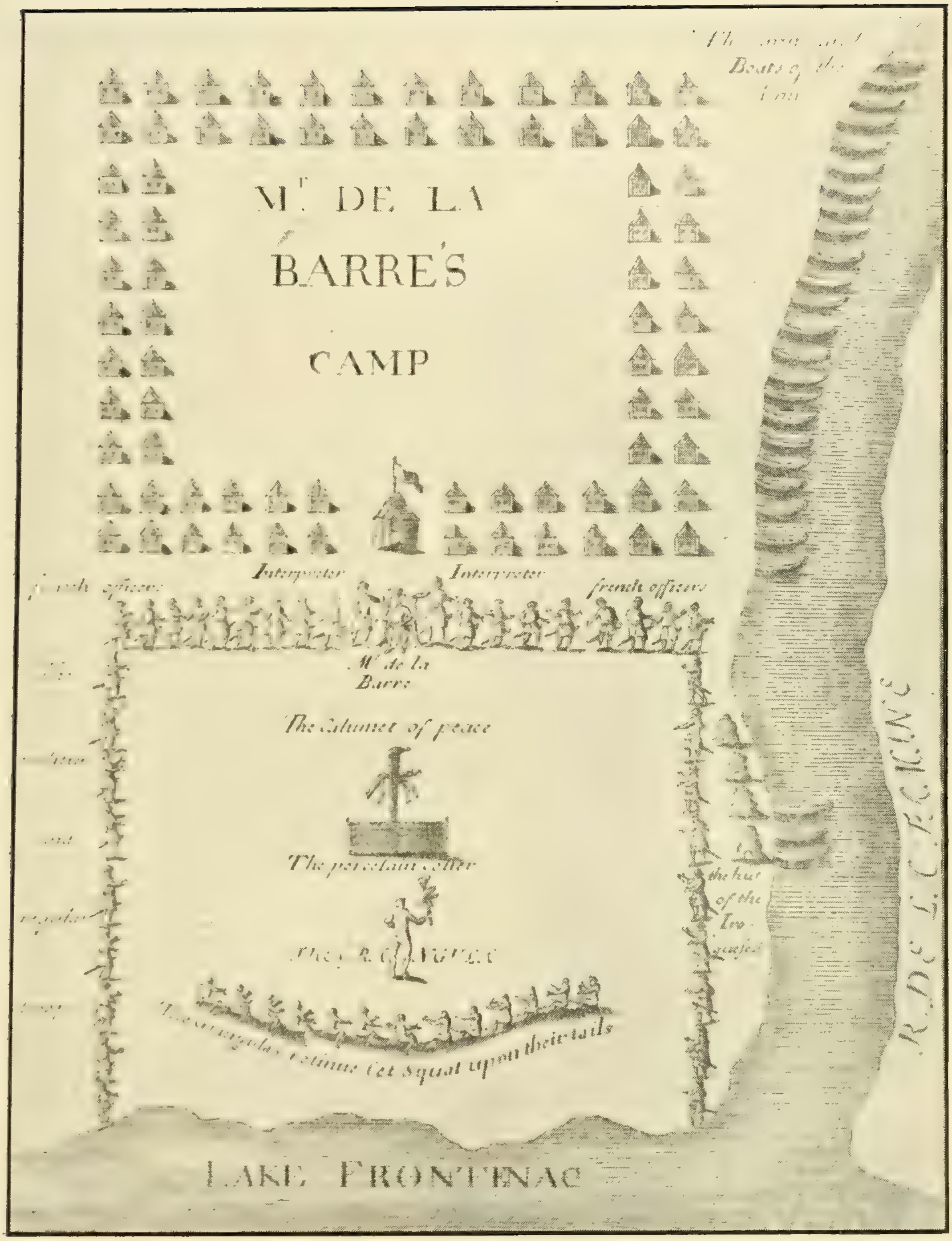
The Senecas on the other hand were hot for war and ready for the expected attack. Lamberville reported that they had concealed all their valuables and their corn and had hidden their non-combatants, and that as a defense they had planned to keep three hundred warriors in their double palisaded forts while twelve hundred others were detailed to harass the French. At the solicitation of the Onondagas they consented however to allow a peace to be made, and to accomplish this a council was called to meet with De la Barre at La Famine, at the mouth of Salmon River.

Meanwhile De la Barre was bustling about in an aimless way, trying to impress the Canadians at home and the King in France with his earnestness and resolve, unsuccessfully however, for it was pretty generally understood that it was all a sham. However "in conformity to the resolutions adopted by the Intendant, the Bishop, the heads of the country and myself", he assembled about a thousand soldiers, mostly Canadians, with some few regulars and some Christian Indians at Fort Frontenac, whence, with the greater part of his little army sick, he crossed the lake to the rendezvous at La Famine, where he was joined presently by a delegation of Iroquois sachems led by an Onondaga, Big Mouth.

The conference that followed was disastrous to De la Barre's plans. Before opening the council he endeavored to deceive the sachems with a story that he had left his army at Fort Frontenac and was there with an escort only, but the astute sachems had already learned that the most of his soldiers were so sick that they had been sent back to Fort Frontenac. In opening the council he spoke mildly of the offences of the Senecas as being provocative of war and that "should it happen again" he had orders from the King to declare war against them. The reply of Big Mouth has long been quoted from Colden's account of it, as a master-piece of Indian sarcasm. "We may go where we please, and carry with us whom we please, and buy and sell what we please". In a later session peace was made, "the tree of peace was planted anew" and De la Barre promised not to attack the Senecas. The Iroquois promised to make reparation for the damage done in capturing French goods but flatly refused to abstain from war upon the Illinois and other French allies in the west. The council broke up and De la Barre returned to Canada.

The threatened invasion of the Senecas had not happened. The prestige of the French was utterly gone in the towns of the Iroquois and the Senecas resumed their interrupted life in their villages about the deserted mission houses of the Jesuits.

The plans of De la Barre proved fatal to the missions in Sonnoutouan. Father Garnier seems to have had early and secret


Mr. DE LA BARRE'S CAMP
Interpreter
Interpreter
french officers
Mr. de la Barre
The Calumet of peace
The porcelain collar
squat upon their tails
the hut of the Iroquoises
LAKE FRONTENAC

The Council at the Camp of Governor De la Barre.

news of the intended attack. Realizing its probable consequences to himself and his colleagues he fled in 1684 to Lake Ontario presumably in company of Father Pierron and found refuge upon a bark owned by De la Barre. Father Raffeix had departed in 1680.

The threat of Big Mouth that they would war upon the western Indian allies of the French proved to be no idle boast. In 1686 Father Lamberville wrote from Onondaga (*1) to Father Bruyas that a war party of two hundred Seneca warriors had just returned from the country of the Miamis and that they claimed to bring with them five hundred captives. Their downfall however was near.

De la Barre's disastrous attempt to lower the pride of the Senecas was followed at once by his recall as Governor of New France. He was superseded by the Marquis de Denonville, a "pious colonel of dragoons". (*2) His coming to assume his office boded ill for the Senecas.

dedenonville

There is no doubt that at this time the Senecas were at the zenith of their power. Numerically they had always been the strongest of the League. They had always been the most independent and arrogant also and because of their almost continuous success in their incessant wars they considered their nation invincible and their country invulnerable. Their recent diplomatic victory over the French added largely to this feeling and they took immediate advantage of the prestige thus gained to attempt an alliance of the French allies amongst the western Indians, with the deliberate plan to alienate them from the French. So, though warfare was being carried on against the Illinois, there was intriguing with the Hurons and Ottawas of the Upper Lake region.

That the new governor, Denonville, thoroughly appreciated the dangers to Canada from and through the Senecas is shown by his letters to the Minister at home in France. "If we have war nothing can save the country but a miracle of God". South of him was the colony of New York, then administered

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*1 Colonial Documents, Vol. III, p. 489.

*2 Parkman, Frontenac, p. 115.

by the ablest Englishman in America, Thomas Dongan, who had so shrewdly taken advantage of the alarm caused by De la Barre's expedition to gain the acquiescence of the unwilling Iroquois to his claim that they were subjects and allies of the King of England. This claim he adhered to and Denonville saw that the danger from the Iroquois alone was as nothing compared to that which would result from the alliance of the Iroquois with the English. The Senecas he could doubtless humble, if alone. Even the entire Iroquois league might be taught a lesson through the defeat of any one of its members, but even this could be accomplished only by considering the Iroquois an independent nation. The invasion of English territory and an attack upon English subjects who were sure to be supported by a vigorous defender of English rights in America, however, were matters entirely different from a mere punitive raid against hostile Indians. The King's instructions were specific in the matter. The Governor must strive for a firm and lasting peace which evidently could only be attained by lowering the pride of the Iroquois. To do this he must protect and conciliate the Illinois and other allies of the French even if this were at the cost of a war with the Senecas. Yet he was distinctly warned of the claim of the English that the territory of the Iroquois was under the jurisdiction of England and that the Iroquois themselves were English subjects. Therefore he must strive to maintain a good understanding with his English neighbors in New York, so as not to involve France in a war with England. On the other hand should the English aid the Senecas, he was to consider them as enemies and treat them as such, equally with the Senecas, without "attempting anything in the countries under the King of England's obedience". Truly a discouraging letter of instructions! (*1) He was sure, however, of the backing of his King, Louis XIV, then the greatest power of Europe, while he could confidently depend on the well-known timidity of James of England.

Tho Dongan

The whole of the year 1686 was spent by the three interested parties, the French, the English and the Senecas, in di-

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*1 From the King's Instructions to the Marquis de Denonville, March 10th, 1685. Doc. Relating to Col. His. N. Y., Vol. V, p. 323.

plomacy. A very interesting correspondence was carried on between Denonville and Dongan, in which Dongan doggedly adhered to the fact that the Iroquois were subject to England, and Denonville used every means to upset or evade this claim, so that he could make war upon the Senecas without bringing on a general war, The Senecas at the same time were continuing their efforts to alienate the western Indians from the French, while they improved their opportunities by getting everything possible from the English of New York. Like De la Barre a few years before, they "found the fishing good in troubled waters".

Denonville made one recommendation which, if carried out, would have effectually settled the controversy over the English claims and at the same time have delivered the Senecas over into his hands. In a memoir "concerning the present state of Canada", 12th of November, 1685, he urged that the colony of New York be bought from the King of England.

It was not until the early part of 1687 that he saw his way to carry out the plans to punish the Senecas. In a memoir to Denonville and Champigny, dated March 30, 1687 (*1) the King approved Denonville's plan to attack them and Denonville accordingly hastened his preparations. So quietly did he work, however, that Governor Dongan at least seems to have received no news of it, though Denonville, June 8th. stated (*2) that Dongan had sent runners to warn a warparty of six hundred Senecas who had gone to attack the Miamis, and that other war parties against Virginia had returned. Yet on June 11th Dongan wrote him a very courteous letter enclosing a copy of the "Treaty of Neutrality", and at that time he seemed unaware of any intended warparty.

In the spring of 1687 news came to the Senecas from an Onondaga who lived at Cataraqui that the French intended to attack them and had already brought to Cataraqui a large amount of ammunition and "iron doublets"; and further that a Frenchman at that place had said that the Governor of Canada designed to attack the Iroquois. Only ten days after receiving this news word came that the French Governor and an army had encamped halfway between Onondaga and Cataraqui. A

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*1 Doc. Hist. N. Y., Vol. 1, p. 322.

*2 Doc. Relating to Col. Hist. N. Y., Vol. IX, p. 325.

hundred Senecas were thereupon despatched as spies, who, coming to the Lake at Irondequoit saw a French vessel lying to there.

Four of the Seneca spies paddled out in a canoe and hailed those on board, receiving an answer, "the Devil take you." The spies returned to their village and reported and twenty others were sent out. These found that the first vessel had been joined by a second, and even while the spies looked they were almost surrounded by Twichtwich (Miami) Indians, who had come upon them by land. The twenty Senecas broke through the line of enemies with difficulty and speedily returned with their alarming story. Meanwhile the sachems had sent out still other three who on reaching the lake shore found the French army disembarked. A Sencca called out and asked what they intended to do. They were answered by a Mohawk who said, "You blockhead, I'll tell you what I am come to doe, to war upon you, and tomorrow I will march up with my army to your castles". The scouts were then fired upon, but they escaped without hurt and reached the sachems at twilight.

The alarming tidings of the approach of the French army created panic in the Seneca villages. The people seem to have been entirely unprepared. The sachems hurriedly decided to send the women, children and old men to places of concealment among the Cayugas, and on the 12th were busily occupied in removing them, some to the Cayugas, others to a lake to the southward of their villages. As soon as the last of the women and children had gone, the sachems decided to burn the villages, and this was done at once, only one small fort being preserved as a base.

To the sachems a defense seemed hopeless. A force of two hundred Senecas remained in the fort, who, learning of the nearer advance of the French, sent runners after the fleeing women, begging the warriors escorting them to return at once to give battle to their enemies. Of the escort three hundred young men turned back and joined the force at the fort. They were young and without experience as warriors and consequently their officers had difficulty in controlling them or in disposing them in any order of battle. The sachems finally decided to try an ambuscade.

The spot chosen was entirely appropriate for the purpose. The trail from the lake approached the village of Gandagora along the bottom of a narrow valley. At one point about a half league from the village the valley floor was occupied almost entirely by a marsh and a thicket which were impassable, and between this marsh and the steep sided valley wall the space was so constricted, that any approaching force must of necessity march in disorder. Besides, the trail at this point was broken by several gullies eroded in the steep hillsides, and these seem to have been densely filled with trees and bushes. The sachems divided their forces into two parts. One was to lie in wait in the marsh, the other in a narrow ravine. The first was to allow the French to pass it without attacking. The force in the ravine was to strike the line as it passed and endeavor to throw it into disorder, whereupon the party in the marsh was to attack it in the rear. It was a well laid ambuscade, which under the usual conditions of Seneca warfare would doubtless have been successful. What were absolutely needed, however, were skilled leadership, co-operation between the two detachments, and a large force, and none of these the Senecas had. Their leaders were the old men who because of their age had remained behind when the war-parties had gone to the South. Wise as these may have been, the party under them were under no control, being young, eager but without experience. And, as they were to find, the French outnumbered them three to one.

Governor Denonville had certainly made the most of his time and was determined to lose no advantage which might be given him through the panic of the Senecas. His force was originally composed of 140 Christian Mohawks, and 2000 French.(*1) This was joined at Irondequoit by about a thousand western Indians under the leadership of such men as Tonty, Du Lhut and others. Immediately upon landing, Denonville selected a site for a fort, to secure the safety of his boats, and by the morning of the 12th two thousand palisades had been cut and planted. Here he left 440 men under D'Orvilliers, and without a pause began his march towards the great village of Gandagora.

The army broke camp on the morning of the 13th and continued its march toward "Gannagaro". During the day they passed without danger two narrow defiles in both of which an ambuscade was expected. At noon the Indian allies wished to boil their kettles, but the Governor forbade it and the army

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*1 Doc. Relating to Col. Hist. of N. Y., Vol. III, p. 431.

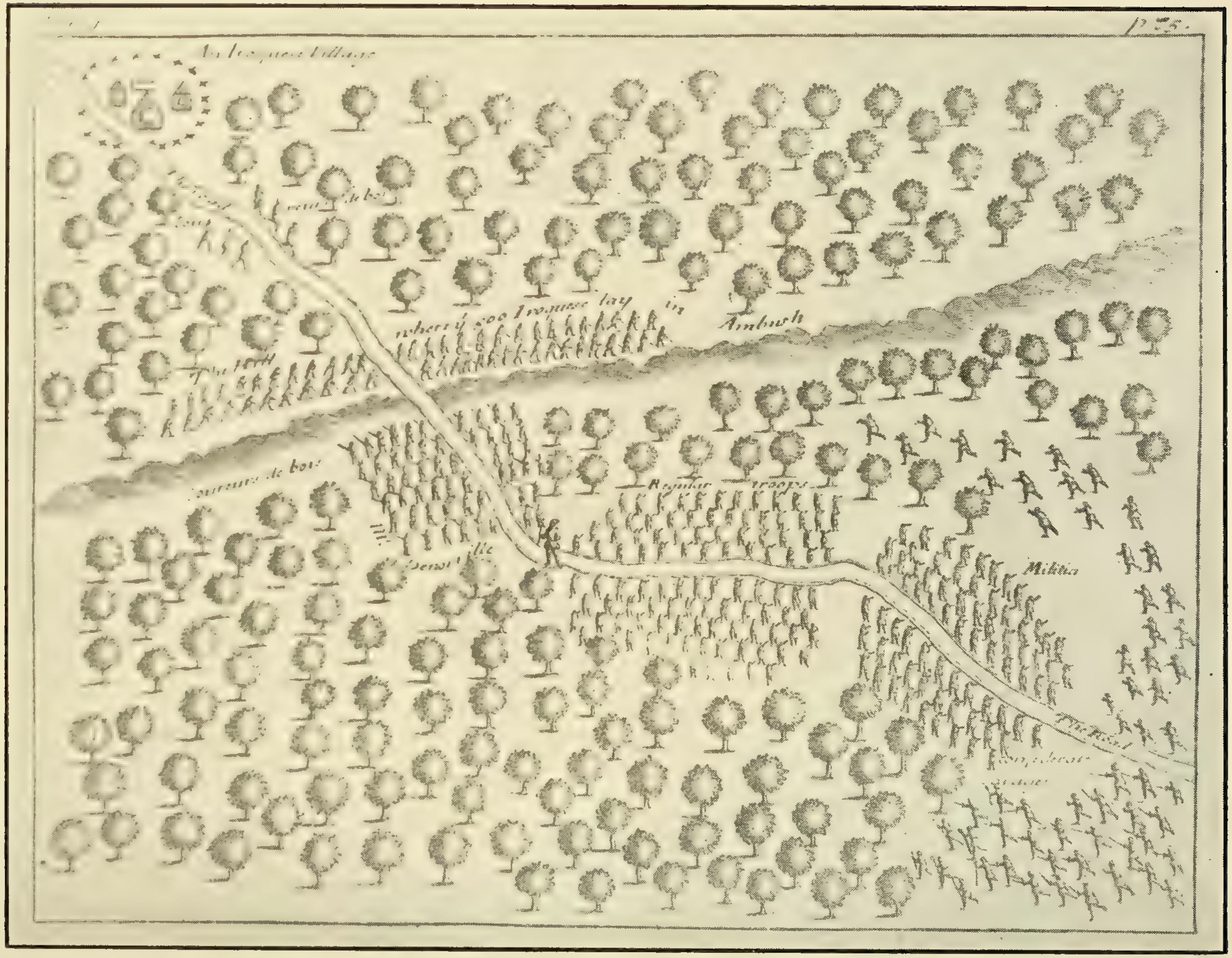
pushed on. The weather was sultry and the men were beginning to show signs of fatigue after their long march, when at four o'clock, three Dowaganha Indians, sent out as scouts, reported that Senecas lay in the way. The Governor sent a hundred Indians to discover their position, and these had gone but a short distance into a defile when they uncovered the Seneca ambuscade in the ravine.

The Seneca attack was vigorous and pushed home. They fired on the Indian scouts, who returned the fire and under cover of the smoke the Senecas rushed in with their tomahawks. The western Indians broke and fled, but the Mohawk contingent held back the attack long enough to enable the main body of the French to come up to their aid. These attacked vigorously. The Senecas, finding themselves outnumbered, fled, leaving behind their guns and blankets, but taking their wounded. The French bivouaced nearby for the night.

The loss on each side was small. The French reported that of their men five or six were killed and about twenty were wounded, but that the Senecas had 45 men killed and 60 wounded. The Senecas claimed that they had had but sixteen men killed, while the French had lost seven white men and five Indians.

Next morning, it being the 14th of July, the army marched to the village of "Gannagaro" which they found burned. Here the Governor detailed soldiers to cut down the standing corn and to burn all stored corn of the preceding year. Another force surrounded the small fort nearby, which the Senecas had used as a base before the ambuscade, and which the Governor believed was still occupied by a strong force of Senecas. When the attacking force reached it, however, they found that the defenders had fled.

For ten days, until the 24th of July, the French army remained in the Seneca country. During this time they seem to have visited all the villages and to have burned those which they found still standing. They broke down or cut down all standing corn in the fields about the villages and burned the old corn in the caches and bark store-houses, an immense quantity, if Denonville is to be believed, for he estimated that his men had destroyed 400,000 minots, or about 1,200,000 bushels. They found and killed a great many pigs also, with which they seem to have found the villages well supplied.


An Iroquese Village
where 500 Iroquese lay in Ambush
Coureurs de bois
Regular troops
Denonville
Militia
The Road

The battle between the Senecas and Denonville's army. — From La Hontan's New Voyages, Ed. 1735.

Details of the devastation of the villages are given in the journal of the Chevalier de Baugy, aide-de-camp to the Marquis de Denonville, of which an excerpt follows. (*1)

"On the fourteenth of August the troops were in battle array. We had prepared ourselves for marching, but the rain somewhat retarded us. We expected, according to what that wounded man told us, to have a skirmish this morning with the Gojogoins, however nothing happened. The rain having stopped, we followed our route to a village, where we found no one, as the inhabitants had put out their fires and fled. In the deserted places there were found seven dead bodies, which they had left behind. The village, which is called Ganaguiara, was quite large. We stopped to roast and eat the corn which we found there. We made our savages fasten green branches to themselves, so that in case of attack we might distinguish them from our enemies.

A quarter of a league from there was a fort built by the savages, where they had stored much corn. They had not dared to get any, however, although it was very advantageously located, being steep on all sides and well defended by the savages, for they had made a projection so that they could easily approach a spring at the foot.

On the fifteenth Monsieur de Tonty was sent to set it on fire. He found some pigs there which did more harm than good, making many sick with dysentery.

At the same time half of our troops, conducted by M. de Calliere, commenced to carry off the corn, while our savages, weary of the pillage, were searching the woods, where they found some booty and one little stupid old man, out of whom nothing could be got. After dinner he was killed. The other half was conducted by M. Vaudreuille. Our savages running ahead found another old man, who told strange things. He told us that 220 of the Sonontouans were (or had been?) coming against us in front and 550 were on our right, in case we should withdraw, so that they might attack us; which however they did not do, contenting themselves with firing at us while running away, having seen the manner in which we received the attack of the first.

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*1 Journal d'une Expédition contre Les Iroquois en 1687 rédigé par Le Chevalier de Baugy, aide-de-camp de M. le Marquis de Denonville. Excerpt translated by Mr. Adolf Duschak, from copy in the library of Dr. Frank H. Severance.

He also said, that the Sonontouans had fled together with the Gojogoins to the Onondagas. It was a very bad and inaccessible country, so that, on account of the rain, instead of pursuing them, we were content to ruin their corn, causing them great damage without our running any risk of losing the half of our small army. He assured us that the Onondagas had declared themselves against us, having learned that we had put one of their chiefs in prison, which however was not true, so that there was no ground for the resolution which they had taken. The truth is that the Sonontouan, who appeared very fierce, and who had not believed that we could get him, was very much surprised and astonished. There were also two women slaves taken, whose lives were spared, as they were of our allies, having been captured some years ago. They came running to us with four men, two other women and two children to save themselves, having learned of our coming. The old man, after having been baptized and having told us that for nine days we had been watched from ambush, had his head cut off. M. de Marquis tried to urge our savages to run after the enemy who were fleeing, but they asking to have some French soldiers with them, he did not judge it prudent to concede, for if they should be attacked, the French would be abandoned and soon cut to pieces.

Wishing to care for the wounded, and the more so as Sieur Enjalrant was very necessary in the country on account of his ability, he resolved to send 100 men to Marais, where our fort was, but as our savages would not supply any, which annoyed him very much, he was obliged to change his plan. It is always a troublesome thing to have to do with such people.

In the evening our savages asked for one slave, whom they recognized as a Chaovanon, of whom we had 50 as our allies. He was given to them, after having been well treated by us, because they believed him to be an Iroquois. This was not without protest, as some took him for a spy. There was also a woman who assured us that there were (or had been?) 800 Sonontouans in the attack. There was some more corn left, which was cut down by the half of our army, and after dinner we started to go to Goinguerra, where there was much corn. In the evening we were disturbed by some savages who ran away. It was thought that they had been captured, for the others said they had heard a great noise in the village to which they had gone. In a little while they were seen to come back carrying booty, which they had found in the village.

On the seventeenth we cut the corn which was around the village, the rain delaying us much.

On the eighteenth we encamped about half a league from our former camp, towards the fort of which I have spoken, where there was a reserve force. The circumference was about 800 well measured paces; if they had wished to hold it we would have had our trouble all for nothing, as it was not commanded from any part. Their communication with those outside would have given us little chance to annoy them much. What corn was not consumed by M. de Tonty we succeeded in burning up. It appeared strange that such old corn tasted as new as we had ever tasted. About ten o'clock in the evening we had an alarm, caused by one Illinois woman ("Chinoise"), who ran away, not having answerd our guard, and was wounded in the leg by a gunshot wound. On being questioned she told us that the consternation among our enemies was very great, that we had killed more than forty by our attack and wounded more, and I think that it is so. It is quite certain that we found 27 dead Iroquois; six more were found in the woods or in a deserted place. She assured us that the Sonontouans made the attack, and that the other nations did not wish to join them.

On the nineteenth we arrived at the village of Totiacton, four leagues distant from the other, where we found still more corn than at the other. We had another alarm caused by our savages, which kept us for nearly the whole night in arms, fatiguing our troops very much, there being no rest either by day or by night.

On the twentieth we broke camp to get on higher ground, being near the villages on our right, where the enemy could attack us. We also cut the corn. Another woman gave us the the same report as the Illinois woman, and she added that four of our Iroquois who had carried the news of our march had their heads split open, that they were fleeing with the Sonontouans when a party of Miamis killed them, and that she heard their cries when she ran away to save herself. This agrees with the report of the savage that our Iroquois are going to inform their people.

On the twenty-first we came to the village of Ganonata, about two leagues from Totiacton, the last Sonontouan village where we had burned the corn.

Today a Huron joined us, having quitted us the day before our attack for the purpose of trying to get some scalps. He got two — of an old man and woman. He reported that the consternation was so great among them that they were going aimlessly about; they seemed to have taken the road to the Andastogues, a tribe which they had destroyed some years ago. We found in the village English arms which were placed there three years ago when M. de la Barre expected to go to war. They antedated it by one year. (?)

On the twenty-second in the afternoon, having burned the old corn and ravaged the new, we came back to our camp at Totiacton in order to destroy that which was left. A rainstorm hindered our plan; four Iroquois, animated by the example of the Huron, went off also to get scalps.

On the twenty-third, the weather having cleared up, we began the harvest. It is an astonishing thing what a quantity they had in reserve. They had at least 15,000 or 16,000 ears. Putting the old and the new corn together, it could be estimated at 400,000 minots. We found in the village a plank inscribed according to their custom, from which we learned of the agreement which the savage Iroquois had with the English at a council where they were urged to join the war against us.

The first two villages did not decide. Only in the last village the chief Onongueritoust, a great friend of the French, said what ought to be done. The Onondaga is depicted on that plank as a bird who sees in the distance all that he wishes to do without mixing himself up in the affair. We read this by means of an interpreter, Aria, a woman who had come on horseback with the Sonontouans. Her horse had a hatchet in its mouth, meaning to say that she came to talk of war. We could not very well get it explained without showing her what was depicted. There were also some of our savages, who gave the same explanation. Without them I do not think we could have guessed what it really meant."

Denonville at once gave formal notice that he considered the devastation of the country a sufficient basis for a French claim to it as conquered territory. On July 19th, then being in the village of Totiakto or La Conception, he formally took possession of "Totiakton, as he has done of the other three villages, called Gannagoro, Gannondata and Gannongarae, and of a Fort half a league distant from the said village of Gannagaro, together with all lands in their vicinity'', ''conquered in his Majesty's name'' after planting in ''all the said Villages and Forts his said Majesty's Arms'', and having caused to be ''proclaimed in a loud voice, Vive le Roi.'' (*1) This formal act of possession was signed in Totiakton by the King's Attorney, by the Rev. Father Vaillant, S. J., and the officers of the army.

The fatigue of forest warfare combined with the ill effects of an unlimited diet of green corn and roast pig, brought the expedition to an abrupt end. On the 24th of July the army returned to the stockade at Irondequoit and presently embarked for Niagara, which the Governor had planned to fortify, leaving the panic-stricken, homeless and infuriated Senecas to return to their country.

That they did return is certain. That they never rebuilt the four great villages is equally certain. There can be little doubt that parties revisited the ruins of their homes and remained about the graves of their dead. The great communities seem to have split, that of Totiakto, for a time possibly settling on what is now the Dann Farm at Honeoye Falls, and later drifting southward up the Genesee River, occupying site after site in Indian fashion until it was once more ousted from its village at Geneseo by Sullivan's army in 1779. The other great community, that of Gandagora with Gandougarae, evidently moved eastward, and occupied site after site until their main villages were destroyed by Sullivan in 1779 at Geneva and Canandaigua.

Archeology of the Senecas of the Period from 1655 to 1687.

The Seneca towns described by the Jesuits and Greenhalgh, and destroyed by Governor Denonville were situated in the valleys of Honeoye Creek and Mud Creek, in what are now Ontario County, Monroe County and Livingston County, New York. (*2) In these valleys is a group of village sites, remarkable for their large size, the immense number of articles found on them, and for the fact that they seem to mark a continuous movement of a large group of people just at their emergence from the Stone Age.

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*1 Doc. Rel. to Col. Hist. N Y., Vol. IX, p. 334.

*2 Map of sites facing title page.

The group in the Honeoye Valley is the more pronounced. Lying well up in the hills, two miles north of Hemlock Lake at Richmond Mills, is the great Stone Age Seneca village site on the farm of Mr. George Reed, and nearby is the similar site on the farm of Mr. Belcher. In their refuse heaps occurs a great variety of articles of stone, bone and antler, characteristically Iroquois. A little to the north is the village on the farm of Jacob Tram, in which the Stone Age articles predominate, but in which a very few European articles have been found. Farther to the north, on the banks of Honeoye Creek, in West Bloomfield, are the two great sites on the farms of Mr. Olmstead at Factory Hollow, and of Mr. Warren at West Bloomfield station. These are of the transition period and show the beginning of traders' influence upon a Stone Age community. Articles typical of the Stone Age are found in the refuse heaps aud European articles are found in the graves. Still farther to the northward is the great site on the farm of Mr. J. T. Kirkpatrick, at Rochester Junction. Here Stone Age articles are few and European articles abundant. On the farm of Mr. John Dann, a few miles to the southwest, is a site from which has been taken an immense number of European articles, while at Lima, nearby, are two more sites seemingly of the same age as that on the Kirkpatrick farm.

This group of sites undoubtedly marks the movement northward down the Honeoye Creek of a very considerable community of Senecas. We may suppose that starting at the Richmond Mills site the community, then unacquainted with the European traders, moved downward, following the creek, and first tarrying at the Tram site, established themselves at the village at Factory Hollow, where traders, probably from New Amsterdam, first visited them. Thence they moved to the Warren site. Leaving this they seem to have followed the creek north and occupied the advantageous spot on the Kirkpatrick farm. Here they seem to have been found by the Jesuits and by Greenhalgh, and this was the village burned by Denonville, called by him Totiakto. The extensive group of sites along the Genesee River, reaching from Avon to Geneseo probably marks the later movement of this group which terminated in 1779 with the destruction of their towns by General Sullivan.

The great site at Victor, undoubtedly the Gannagaro of Denonville and the Canagorah of Greenhalgh may mark the termination of a group movement northward along the valley of Mud Creek, similar to that along Honeoye Creek. Such a movement seems to have originated at or near the head of Canandaigua Lake. Seneca tradition indicates this in making their nation spring from a great hill at the head of Canandaigua Lake. No Stone Age Seneca site of any size has been found there, however. The Stone Age articles found on the flats at Naples by Mr. D. Dana Luther, and described by him as coming from "Nun-da-wa-o, the oldest Seneca village", are mainly Algonkin in type, though some undoubted Iroquoian points occur. There are two villages and a large camp at Bristol in the Mud Creek valley, west of Canandaigua Lake, from which come Stone Age articles of the Iroquois type, but not enough is known of these sites to warrant any theories regarding their occupancy.

Lower down in the valley of Mud Creek are three sites, all later than the Stone Age. One is on the farm of Mr. Appleton, near Holcomb. Another is on the farm of Jesse Marsh in the northeast corner of the township of East Bloomfield. A third is on the farm of Henry Fox at Wheeler Station. It seems entirely possible that this last is an early site of Gandougarae which was burned in 1670 and rebuilt, probably on the Marsh farm. The Appleton site is perhaps an early site of Gandagora, from which the inhabitants moved, first to the Beal site, and later to the site at Victor, on Boughton Hill.

This Boughton Hill site has been positively identified as the Mission of St. Jacques in the village of Gandagora, and here as at Totiakto, the community movement was checked by the disaster incident to the French invasion and turned eastward. The two villages of Gandagora and Gandougarae seem to have joined in this eastward movement and to have settled first at Canandaigua and later in the region east of Canandaigua Lake, where they were found in 1779 by General Sullivan in scattered towns at Geneva, Canandaigua and along Seneca Lake.

At East Avon on the farm of Mr. Cleary is an early site. This community seems to have moved eastward a few miles to Lima and thence to the site on the Dann farm, three miles north of Lima, where under the name of Ganounata it was burned in 1687.

The whole movement of the Seneca Nation from their Stone Age village at Richmond Mills, northward toward Lake Ontario, seems coincident with the growth in power of the nation. Until 1635 or thereabouts, the Senecas had barely held their own against their strong Iroquoian and Algonkin neighbors. On the south and west they were harassed by their Iroquoian kin, the Eries and Neuters, of which the Wenroes, who were the outposts of the Neuters, were driven back by the Senecas in 1639.

The purchase of guns from European traders seems to have changed the Senecas from a relatively weak people to a strong offensive nation, and this is coincident with their movement from the well hidden and well protected villages in the hill country about the head of Hemlock and Canandaigua Lakes to more open and more easily accessible situations nearer Lake Ontario.

Not all the sites mentioned were occupied by the Senecas during the period from 1655 to 1687. It is probable that the Victor site, the Kirkpatrick site, the three East Bloomfield sites and the two Lima sites belong to this period, possibly also the two West Bloomfield sites. Although these have been known and recognized as Indian village sites for many years, little systematic archeologic work has ever been done upon them, and though collectors have taken from them an immense amount of archeologic material, a relatively small amount has been preserved and made available for study. The State Museum at Albany secured a large collection from the two West Bloomfield sites, through purchase from a collector. In the Genesee Valley Museum at Letchworth Park is a large collection from the same sites, from the Dann farm and from the Kirkpatrick site, with a few artifacts from Lima. The Buffalo Society of Natural Sciences systematically explored much of the village of Gandagora at Victor and its cemetery, the cemetery of the village of Gandougarae, and that on the Beal farm, and a large collection from these sites is on exhibition in its museum. Several smaller collections are in the possession of local collectors.

The following study of the archeology of the Senecas of this period is based upon:

(a) Field work on the sites at Victor (Gandagora), East Bloomfield (Gandougarae) and Rochester Junction (Totiakto).

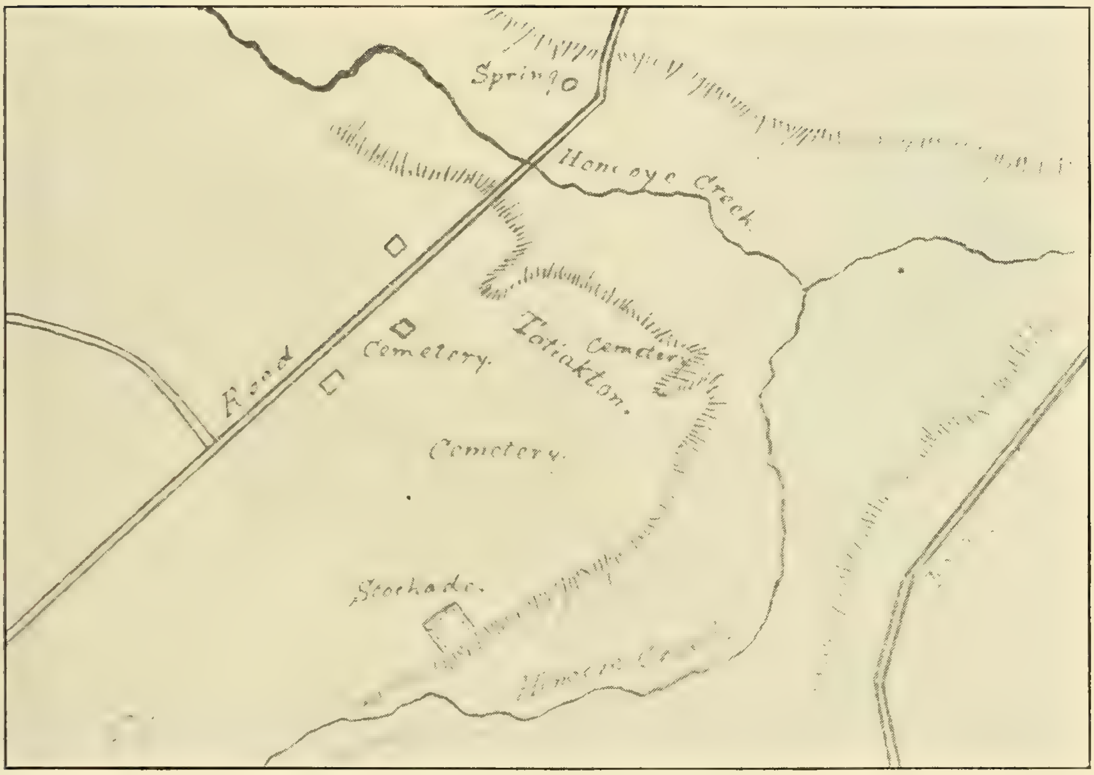
(b) Visits to the site at Lima, the Dann farm and the sites at West Bloomfield, at Naples and at Richmond Mills.

(c) A close study of the collections at the Genesee Valley Museum at Letchworth Park, the Museum of the Buffalo Society of Natural Sciences, the private collections of Mr. Ray Dann of Fairport, Mr. Ernest Smith of Honeoye Falls, Mr. Fred Hamlin of East Bloomfield, Mr. D. Dana Luther of Naples, Mr. Alva Reed of Richmond Mills, and a number of other local collectors.

(d) The writings of O. H. Marshall, E. G. Squier, L. H. Morgan, George H. Harris, and several local historians.

The Kirkpatrick Site at Rochester Junction.

(Totiakto or La Conception.)



Plan of Totiakton, by G. H. Harris.

The village situated here was identified by Mr. O. H. Marshall as the Totiakto of Denonville, the Tiotehatton of Greenhalgh and the mission station of La Conception of the Jesuit Father Raffeix.

It is situated in the bend of Honeoye Creek, one fourth of a mile south of the station at Rochester Junction on the Lehigh Valley railway, on the east side of the main road running north and south from Rochester Junction to Honeoye Falls. It occupies the terrace above the creek on its south side, and is on the farm of Mr. W. J. Kirkpatrick. It was settled originally in 1803 by a Mr. Sheldon who moved to it from Deerfield, Mass.

Honeoye Creek is the outlet of Honeoye Lake, whose waters it conducts to the Genesee River, which it joins at the town of Rush. At Rochester Junction it bends from its hitherto northward course and flows westward. The village was in the bend, so that the creek flowed on the eastern and northern sides of it. The valley walls are here eighty feet high and rather steep. Between the valley walls and the stream are extensive flats from twenty to thirty rods wide. A strong spring breaks out on the flat on the northern (opposite) side of the creek, about one hundred yards from the site. Another spring is said to exist on the western edge of the site. The soil is gravelly loam, with frequent sand pockets. Many stones litter the surface. Excepting the valley walls, which are covered with underbrush and some large trees, the entire site is under cultivation as it has been for nearly a century.

When the land was bought by Mr. Sheldon a square stockade of logs stood at the southern end of the site, near the edge of the terrace. At that time Indian relics were abundant on the surface, and even now the soil yields many articles. As a whole, however, the surface gives few evidences of a long occupancy by a large community. Refuse heaps are few and seemingly shallow, yet they still yield scrap brass and animal bones.

Graves have been opened on the site, perhaps not more than fifty in all. Some have been found in cultivating from time to time on the western edge of the site. Most have come from a cemetery on the northeastern edge, where the steep valley wall is broken down by a slight depression.

The cemetery is situated on the slope of the valley wall and is densely covered by underbrush and trees. The soil is hard clay and gravel loam with sand pockets interspersed. The graves are in these sand pockets. The whole surface of the cemetery is pitted with holes dug by collectors.

In the summer of 1910 I was sent by the Buffalo Society of Natural Sciences to locate any graves which might still remain. Testing was done with a rod and by running trenches across the cemetery. Five graves were located, and are here described:

Grave Number 1. Depth 36 inches. Young adult. Skeleton flexed, face east, head south, arms partly extended, hands between knees. No articles were buried with the body.

Grave Number 2. Depth 30 inches. This had been opened and probably rifled.

Grave Number 3. Depth 30 inches. This also had been opened.

Grave Number 4. Depth 36 inches. This could not be entirely uncovered as it extended under a tree, whose roots completely filled the grave. The leg bones only projected from beneath it. No articles could be found.

Grave No. 5. Depth 40 inches. This grave had been opened, evidently not by collectors, but by Indians, probably for reburial in some bone pit. All the larger bones had been removed. No articles could be found.

Articles found in graves and on the surface by local collectors are preserved as follows:

Mr. W. J. Kirkpatrick has many good articles, some from graves, others found on the surface. These comprise notched and triangular flint points, gunlocks, one made of brass and ornamented with scroll work, iron axes, a very long gun barrel, iron knives, a pair of scissors and a broken bone pipe.

The collection of Mr. Ernest Smith of Honeoye Falls consists mainly of articles of European origin and comprises arrow-points of brass and copper, axes, knives, glass and shell beads, clay pipes, and bone combs.

Mr. Joseph Mattern of West Rush collected some articles of bone and shell from this site, amongst them shell "pins" and bone awls.

Among the articles gathered by local collectors and scattered are said to be finely carved bone combs, clay jars, clay pipes, a silver vessel, which was evidently a part of an altar service, and a gold ring with the letters "I. H. S.". A bone comb, illustrated in Beauchamp's "Horn and Bone Implements of the New York Indians", fig. 183, may be from this village.

The Dann Site.

This site, formerly known as the Ball Farm site, is situated on the farm of Mr. J. E. Dann, and lies one and one-half miles west of Honeoye Falls, and about three miles south of the preceding village. It occupies the highest terrace above a small stream, called Spring Brook, on its eastern edge. The valley walls are from twenty to forty feet high and rather abrupt. The brook at this point falls over a limestone escarpment, probably Onondaga, containing chert.

The entire site is under cultivation. The soil is gravelly clay loam, some of it is rather stubborn and compact. According to Mr. Dann, refuse pits and refuse heaps are abundant. He asserts that much charcoal occurs scattered over the surface.

A very large cemetery was discovered in a series of knolls on the western edge of the site on the bank of the creek. From this Mr. Dann claims that perhaps four hundred burials were exhumed. The skeletons were in various postures. Many were flexed. A few were thrown in promiscuously, evidently "bundle burials". Some few were at length. A few small pits containing three or four skeletons each were exhumed.

An immense number of articles came from these graves, and most of these are now in the possession of Mr. Ray Dann, of Fairport. N. Y., whose collection is perhaps the most interesting private collection in western New York. A brief description of it will give an idea of the artifacts from this site:

ARTICLES OF STONE.

Whetstones. A few flint scrapers. Four of chalcedony came from one grave.

A few triangular arrow points.

Three pipes, one of catlinite, one of Huron slate, one of argillaceous limestone. The catlinite pipe shows an old break in the stem which had been mended with lead.

Pendants made of catlinite came from one grave.

Gun flints of local flint are numerous.

ARTICLES OF BONE.

A human figure cut from bone is figured by Beauchamp in "Horn and Bone Implements of the New York Indians", fig. 169, plate 16.

Fifteen or more beautiful bone combs, three of which were illustrated by Beauchamp in figures 181, 189 and 337. A European comb was found.

Two very large bone spoons as large as a table spoon with long cylindrical handles.

One broken antler harpoon point.

Several perforated tortoise shell rattles.

Perforated and unperforated bears' teeth.

ARTICLES OF CLAY.

In the collections are perhaps twelve clay jars of various sizes, most of them very small. A few are large, the largest holding perhaps four quarts. One has a flaring rim and serrate pattern, similar to those shown in figures 115 and 132 in Beauchamp's "Earthenware of the New York Aborigines". The smaller jars hold about a teacupful. One is beautifully made and decorated, but some are very rudely made.

The collection contains a large number of most excellent pipes, altogether perhaps forty. Many of the pipes are ornamented, and most of them are made to represent the human form and various animal and bird forms. The "Washington pipe" from Saratoga County, figured by Peauchamp, fig. 211, is almost duplicated in this collection. Two effigies of animals, possibly bears, with brass eyes, and two of human heads, are almost duplicates of two found in a grave at Canagora. Some of these pipes seem to have been broken at the time they were thrown into the graves.

ARTICLES OF SHELL.

Shell articles are exceptionally numerous and fine. In the collection are perhaps eight quarts of clam shell wampum. Excepting this wampum most of the shell articles are made of massive shell; perhaps fulgur. A large portion of a shell, with its columella removed, may have been a ladle, or may have been raw material, brought to the village for working up. A columella about six inches long and five-eights of an inch thick may have been raw material for making discoidal and cylindrical beads, of which many are contained in the collection.

Several roughly cylindrical beads, about an inch and a half long and three-fourths of an inch thick, came from one grave.

There are numerous claw shaped, tooth shaped and nondescript pendants.

Perforated olivella shells are found on the surface.

Many of the shell articles are illustrated in Beauchamp's "Wampum and Shell Articles used by the New York Indians", figures 84, 124, 130, 136, 142, 143, 144a, 166, 168.

Three gorgets from this collection are shown by Beauchamp, figures 162, 164, 164a.

Crescent shaped pendants, made from fresh water mussel shells, are numerous.

Some beautiful shell "pins" are figured by Beauchamp, figures 78a, 79.

ARTICLES OF WOOD.

Wooden ladles come from the graves. Most are fragmentary. One has a carved handle.

TRADE ARTICLES OF IRON.

Axes, hoes, gun locks, knives, scissors and awls are numerous. One gun lock was oiled and put into condition to use. A flint-lock pistol is shown. Many knives have bone handles similar to those from the graves at Gandagora. One iron wire bracelet is shown.

TRADE ARTICLES OF BRASS AND COPPER.

Brass kettles of all sizes were found. The smallest holds about a teacupful. A few triangular arrow points were found.

A belt is preserved by its brass ornaments, and is shown in Beauchamp's "Metallic Ornaments of New York Indians", fig. 297.

"Jesuit" brass rings are abundant.

A small copper kettle and a copper ladle were found.

TRADE ARTICLES OF LEAD.

Bar lead and about fifteen pounds of bullets and slugs are shown.

Some leaden tobacco pipes.

A leaden owl with glass eyes.

An "apostle spoon" came from a grave in which was a European earthenware pitcher.

TRADE ARTICLES OF GLASS.

Beads are of the usual variety, including polychrome, spherical and cylindrical types.

In the collection from the Dann Farm preserved in the Genesee Valley Museum at Letchworth Park are musket locks, flints, bullets and bar lead, shell beads and pendants, an iron hoe, an iron fish spear, a hawk bell, a button similar to one taken from the great bone heap at Gandagora, lead figures, pigs' teeth and fragments of European pottery and a stone gouge.

The identity of this village is doubtful, and it is equally doubtful whether it belongs to the period from 1655 to 1687. Mr. Nelson Olds, of Rochester, who has given the villages of the Genesee valley much study is certain that it is the Totiakto of Denonville. Mr. Ray Dann and Mr. Ernest Smith, both of whom are familiar with the villages, say that it is later than Denonville's time. There is little to support either theory.

The "Tiotehatton" of Greenhalgh is undoubtedly the Kirkpatrick site. He saw and described this in 1677. Totiakto was burned in 1687, ten years later. A community as large as that described as occupying "Tiotehatton", if it lived on the same place for ten years, would leave, it seems to me, much more evidence of its occupancy than is shown on the Kirkpatrick site. That is, the evidence of Indian occupancy is not commensurate with the number of inhabitants and the length of time. Yet there is no doubt that the artifacts found on the Dann site are later than those found on the site of Gandagora, and as this was certainly contemporaneous with Totiakto and in constant intercourse with it, there should be practically no difference. I am inclined to think either that the Dann farm was occupied by the refugees from Totiakto upon their return to their desolated country after Denonville had left it, or that it is the village of Ganounata, marking the end of the movement of the village starting at East Avon, on the Cleary farm, stopping at Lima and terminating at the Dann farm in 1687. There seems much to support the theory that this community when at Lima and at the Dann farm was the village in which lived Onnencaritoui, one of the "keepers of the western door" of the Iroquois League.

The Lima Sites.

An extensive village occupied the land where now stands the Presbyterian church in the village of Lima. Many graves have been opened there by workmen and others and relics from some of these still remain in the collections of local archeologists. The site is about three miles southwest of the Dann farm, on the western side of the same stream, Spring Brook.

A cemetery exists about a mile north of Lima on the electric railway. This has been opened by workmen and others.

Articles from the Lima sites are scattered amongst several collections. The Genesee Valley Museum has some pipes from the cemetery in Lima village. They are of clay and are remarkable for their large size. Mr. Ray Dann has a clay jar found in a grave in the cemetery north of Lima.

The Factory Hollow Site.

(Shattuck Site.)

This occupies the high terrace overlooking the eastern bank of Honeoye Creek, at the point known locally as "Factory Hollow", a half mile south of the "Old Genesee Road". It lies on land formerly owned by Mason Shattuck, now owned by Mr. Olmstead and by Mr. Hopkins.

The valley wall of Honeoye Creek is here about one hundred feet high and very steep. The village lay between the edge of this escarpment and a narrow and deep gully which at this point debouches into the Honeoye from the southeast at a sharp angle. The triangular site was thus defended naturally upon two sides. At its southern edge is a knoll known locally as Fort Hill.

The entire village site is now used as a sheep pasture, the grass of which conceals any vestiges of occupancy. On the steep hillside bounding the village on the west are numerous deep refuse heaps, which contain great quantities of animal bones, potsherds and some few stone and bone implements. Half way down the slope is a curious ridge resembling a covered way or sunken road ascending the bluff at an easy angle. This may be natural, but it has every appearance of being artificial. No one living in the vicinity seems to know anything about a roadway there.

The village cemetery lies at the extreme northern edge of the village. It has been excavated, partly at least, by local collectors and by Marvin Peck of West Bloomfield, who eventually sold his collection to the State. A local resident claimed that about one hundred and fifty graves had been opened.

The soil is gravelly and very hard to dig. The graves are said to be deep. A large number of very fine articles were exhumed with the bodies. Many of these are Stone Age articles, amongst them numerous clay jars and pipes. Along with these are numerous European articles. In a grave opened by Mr. Hinman, a local collector, the skeleton was said to have been covered with the remains of a fur robe containing a bear's skull, over which was a layer of red cedar sticks. Beneath the robe was a very large brass kettle, inverted over three clay vessels. With the body was also a pipe bearing the effigy of a bear, whose head was hollow and contained a small pebble, which rattled when the pipe was shaken. With one skeleton were found two small human effigies carved of bone.

It is said that at the southern edge, in a knoll known as "Fort Hill" a deep pit was found.

Many of the articles found in the cemetery here were illustrated by Mr. Beauchamp in "Horn and Bone Implements of the New York Indians", fig. 172 and 173, and in his "Earthenware of the New York Aborigines", fig. 80, 91, 97, 113 to 116, 128 to 137, 144, 162, 213 to 216.

The Warren Site.

This is about two miles north of the preceding site on the farm of Augustus Warren, whose house is directly opposite the West Bloomfield station of the New York Central railway.

It occupies the terrace on the eastern side of Honeoye Creek. The bank at this point is about fifty feet high, and is separated from the creek by extensive flats, which are in some places one hundred yards wide. The soil is gravel, loam and sand. The entire surface is under cultivation.

At the time of my visit the crops of clover and timothy effectually concealed all traces of any possible occupancy.

A cemetery was said to have been exhumed in a series of knolls on the extreme western edge of the village. Many graves were opened here, and some of the articles, some say most of them, were bought by Mr. Marvin Peck and later sold by him to the State. A clay jar is said to be owned by Mr. William Brooks of Honeoye Falls. Colonel Moulthrop, principal of School No. 26, in Rochester, is said to have some of the articles. Mr. Wm. H. Adams, in a manuscript owned by the Buffalo Society of Natural Sciences, says that he obtained from graves here great quantities of pottery and pipes which came from graves in the higher part of the cemetery, and brass kettles and glass beads from the lower part. He further says that the graves were in regular rows and at a regular distance apart, and that the bodies lay flat at full length. He found three clay dishes in one grave, and in another a "rattle" made of two circular pieces of skull, cut from the front and back of the skull, and each perforated with four holes.

It is entirely probable that some of the jars figured in Beauchamp's "Earthenware of the New York Aborigines", previously noted as having probably come from the Factory Hollow site, were really from this site.

The Appleton Site.

This is on the farm of Mr. Appleton, on the eastern bank of a small stream called Fish Creek, at the forks of a road, one and one-fourth miles northeast of Holcomb station.

It occupies portions of three fields, one being an apple orchard. The soil is heavy red clay loam, and a few refuse heaps were visible at the time of my visits. From these I took some scrap brass, some glass beads and animal bones.

No cemetery has been found near this village. I tested several knolls nearby without success, though skeletons have been found in a gravel pit across the creek.

Mr. Fred Hamlin of East Bloomfield has a fine collection, many articles of which have been taken from this site. They are mainly of European origin, and include the usual glass and shell beads, iron axes and knives, and shell ornaments.

The Marsh Site.

(Gandougarae.)

This is in East Bloomfield township on the farms of George and Jesse Marsh, Ira DeLong and David Thompson, a quarter of a mile north of the junction of the road from Holcomb to Canandaigua with the road from Victor. It lies a quarter of a mile east of Mud Creek, on the eastern bank of a small stream, a tributary of Mud Creek.

Site of Gandougarae from the west.—Photograph by F. Houghton.

The soil is heavy red clay loam. At the time of my visits most of the surface was under cultivation, and much of it was in wheat and hay which concealed all evidence of occupancy over most of the site. Large refuse heaps cumber the soil and from them are gleaned annually many glass beads and other articles.

There seems to be no doubt that this village was Gandouragae, the Mission station of St. Michel. It was occupied by captives from the Neuter country, the country of the Onnontiogas, and from the Huron village of Scannonenrat, all of whom were colonized here by their Seneca conquerors.

Two cemeteries of this village have been found. One on the farm of Ira DeLong was explored in 1911 for the Buffalo Society of Natural Sciences by the writer. The second was found in 1911 by George Marsh on his farm, and was excavated by Heman Coates of Clifton Springs, Fred Hamlin of East Bloomfield and William L. Bryant and the writer for this Society.

The De Long burial place is on a lobate knoll west of the village, from which it is separated by a deep dry gully. The soil is heavy, tenacious red clay. Graves were known to be here fifty years ago when the field was first plowed, and were then marked by depressions. Some graves have been opened by Mr. Hamlin and Mr. Coates, and are noted on the list below.

Bones representing eleven bodies were taken in 1911 from the knoll on Ira DeLong's farm. They were located by means of the posthole digger, with which test holes were sunk over the whole area at a distance of a yard apart. The clay was so hard that the rod was valueless and the digger was broken three times.

Nearly every grave was limited by the original grave walls, which still showed clearly cut in the tenacious clay. Nearly every one still showed a bark lining. Strips of bark had been laid on the bottom and turned up to cover at least one wall of the grave.

Almost every skeleton was laid out in a flexed position, which however differed from the usual flexed position in that the body lay on the back instead of the side, with the legs drawn up sidewise.

Two skeletons were scattered, showing burial of bones only. Two graves contained the bodies of two persons each. The burials differed radically from those at the Boughton Hill site, the Bunce cemetery and the Beal site, although distant but three miles.

All bones and many of the articles were badly preserved. The bones were so badly decayed that in many cases it was impossible to identify even the massive long bones, and the more fragile bones were entirely decayed. All hollow bones and articles, as skulls and kettles, were crushed flat, and the clay was so tenacious that articles would break before the enclosing clay.

The Graves.

No.	Depth and Posture.	Articles.
1.	Bones scattered and badly decayed.	Scraps of brass throughout grave.
2.	A dismembered body. Pelvis and legbones on N. edge of grave, but not in position. Skull on S. edge with heap of all bones of upper portion of body, all on bark floor of grave. Articles at pelvis and beside skull.	At pelvis two brass kettles, bone awl, worked phalanx, iron knife, paint. At skull, brass oval box wrapped in fine fur, gun flints and awl.
3–4	Double grave. Both flexed. Sides of grave well defined, forming a rectangle, 42" by 36", Bark on east and south sides and bottom Skeleton No. 3, young woman on side, flexed, head west, face north, leg bones mingled with No. 4.	At pelvis of No. 3, wampum, around neck long red glass beads in two strings, around wrists a wide brass bracelet and an iron wire bracelet.
	No. 4, old man, flexed, on back, legs drawn up sideways and mingled with No. 3.	At feet of No. 4 a deposit of flint and points with two antler flaking tools and bear's tooth, all on bark and covered with a sheet of brass. Behind head a clay pipe and iron awl. Between skulls of No. 3 and 4, a clay kettle and a deer's bone. Small bones in kettle. Burned corn in soil over grave.

5.	Bones entirely decayed, being represented by teeth only.	Glass beads and brass wire ring.
6.	Adult, flexed, head west, face north. Upper part of body in a somewhat upright position, lower part on side.	Wampum under skull.
7.	Young adult, flexed, head west, face north.	Burned corn in clay over grave.
8.	Young adult. Bones entirely decomposed. Grave bark-lined, bottom and two sides. Very shallow, 15".	2 brass kettles, half a clay kettle, a wooden bowl and ladle, many smaller articles, corn and squash.
9–10.	Double grave Two adults, flexed, skulls touching, legs intermingled, on back, legs sidewise. Bark on one side and bottom. Deep hole at feet of No. 10. No. 9, head west, face north. No. 10, head west, face south.	Two deposits of articles, one under right shoulder of No. 9, one on vertebrae of No. 10. Deposit of No. 9 consisted of brass kettles on bark, and covered with bark, ladle, pipe, gourd rattle.
11.	A partly opened grave. It had been rifled of all articles, but most of the bones had been unmolested. The skeleton was scattered, but still lay on the bark bottom of the grave, which was heavily covered with red paint. One side of the grave was lined with bark.	

In a letter to the writer Mr. Heman I. Coates of Clifton Springs describes graves excavated by him on the DeLong farm as follows:

Grave.	Posture.	Articles.
No. 1.	Sitting.	Copper kettle, knife, part of bone comb, red paint.
2.	Bones scattered.	No articles.
3.	Parts of 3 skeletons.	No articles.
4.	Sitting.	Brass kettle, 260 glass beads, part of bone come.

5. Two skeletons.	Brass kettles, portion of clay kettle, clay pipe with female figure on bowl facing smoker, pipe stem.

All graves were bark-lined and all kettles were bottom up near the head.

The second burial place is on the farm of George Marsh on the western edge of the village site, as it dips down to the gully already spoken of. The soil is heavy red clay.

The Graves.

Grave.	Posture.	Articles.
1. (Hamlin.)	?	Brass kettle and seeds.
2–3. (Hamlin.)	Double grave, one skeleton above the other.	Upper had no articles. Lower was flexed. Kettle in bark and blanket. In it a wooden ladle carved, with man on handle. A long carved bone spoon lay under the pelvis.
4. (Hamlin.)	Flexed.	A wampum belt at pelvis from which came about 500 beads. An unfinished bone comb lay under the head.
5. (Hamlin.)	Bark-lined. Skeleton represented by a few bones only.	Two brass kettles, bone handled knife, glass heads.
6. (Hamlin.)	Very shallow, about 15 inches. Flexed.	No articles.
7. (Hamlin.)	Bark on bottom. Flexed.	A 12-row wampum belt lay across the pelvis, and from it about 1,000 beads were taken. At neck a string of long red glass beads.
8. (Houghton.)	Bark on bottom and one side. Flexed.	Brass kettle wrapped in bark.
9. (Bryant.)	At length on back, head west. Above the skull was another skull with lower jaw in position.	Remains of brass kettle, wrapped in skin, and covered with bark; paint, brass tube, few beads.

10.	(Bryant.) Flexed, head west.	Brass kettle, berry seeds, wooden ladle. Kettle wrapped in cloth and covered with bark.
11.	(Bryant.) Child, bones badly decomposed.	Few beads and some brass.
12.	(Bryant.) Fragment of skull and a few bones.	Brass kettle bottom wrapped in bark.
13.	(Bryant.) Young adult, bones almost decayed.	Brass kettle bottom wrapped in bark.

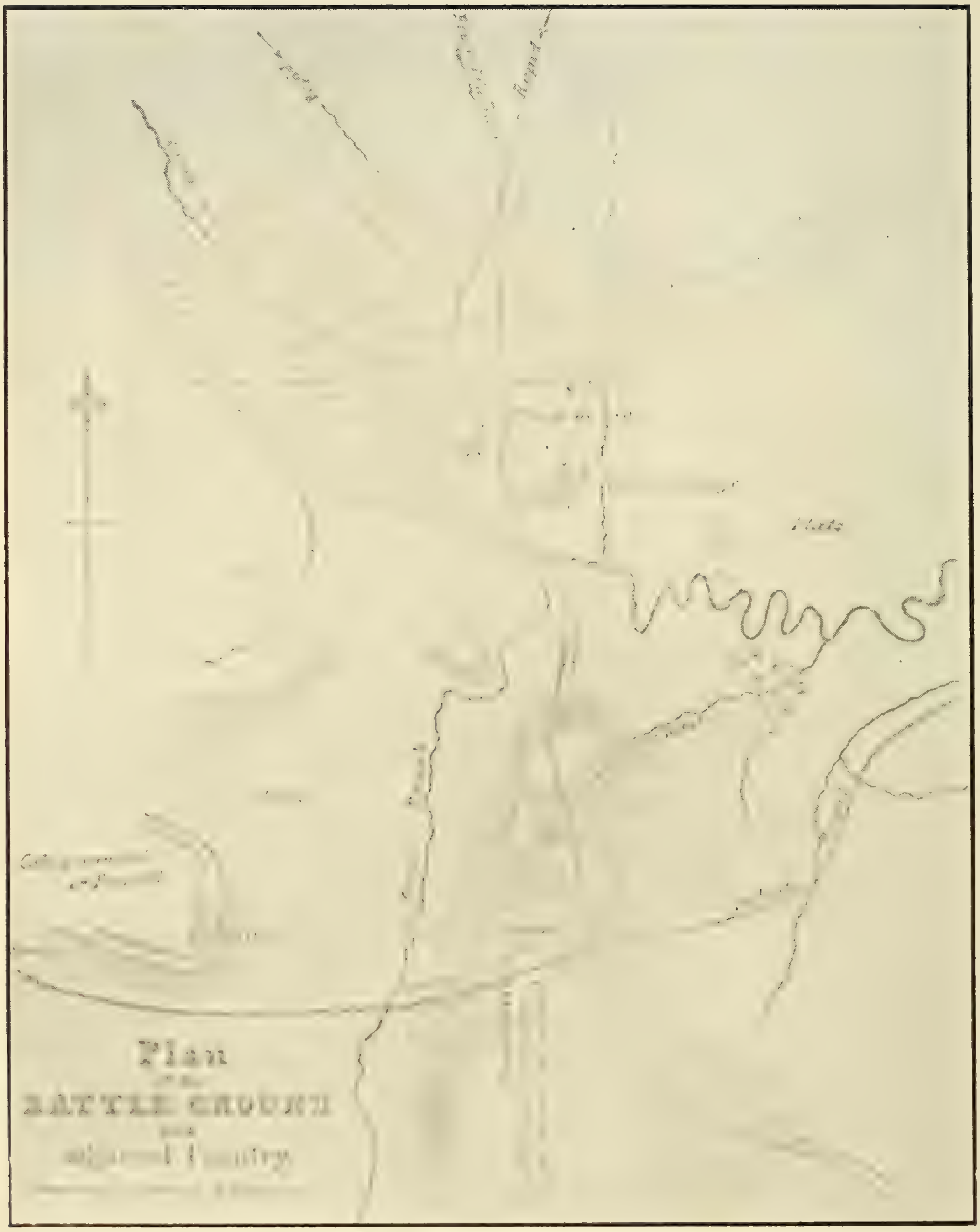
Mr. Heman J. Coates in a letter to the writer gives the following information regarding graves opened by him at this point:

Grave.	Posture.	Articles.
1.	Reclining.	Kettle, two rings, lead image of man playing a pipe.
2.	Sitting.	Rim of brass kettle, 205 glass beads, 18 shell crescents, 3 massive shell beads, 22 corn shaped glass beads.
3.	Sitting.	Kettle rim and wooden ladle, 938 beads, part of copper bracelet.
4.	Reclining.	Kettle rim, 6 bullets, bell.
5.	2 skeletons in grave, bones scattered.	2 kettles, gun barrel, knife handle.
6.	2 skeletons in grave, bones scattered.	2 kettles, clay pipe with grooved stem and human face.
7.	Sitting.	Small iron celt, square piece of iron, kettle rim covered with bark, perforated bear's tooth.
8.	Sitting.	Broken sword blade, 1100 small glass beads, 370 large glass beads, 40 wampum beads, 50 wheat shaped glass beads, 15 long shell beads from 2½ inches to 5¾ inches long, 1 shell gorget, 1 shell mask, 1 shell totem of bird's head, 10 finger rings, 3 bells, 1 clay pipe, iron spoon, kettle full of seeds.

9. Calcined human bones in a bed of charcoal and ashes at depth of 5 feet. On edge of the pit a pistol barrel. Below ashes 200 beads, 5 gaming flints ("gun flints?").

The Fox Farm Site.

This is a large village on the farm of Henry Fox at Wheeler Station on the New York Central, in East Bloomfield. It is one


Road
Flats
Plan
BATTLE GROUND
adjacent Country

Plan of Gandogora and Environs from Historical writings by O. H. Marhall.

mile south of the village on the Marsh farm, and like it, is situated on the eastern bank of Mud Creek. The soil is the same heavy red clay, and is now in farm crops.

The surface shows large accumulations of refuse in which are to be found large numbers of beads and other articles.

Seven graves were found by Mr. Fox a few years ago in digging the cellar for his barn. These are on the extreme eastern edge of the village. One was found in digging a post hole on the extreme western edge. With this body was a fine bone comb.

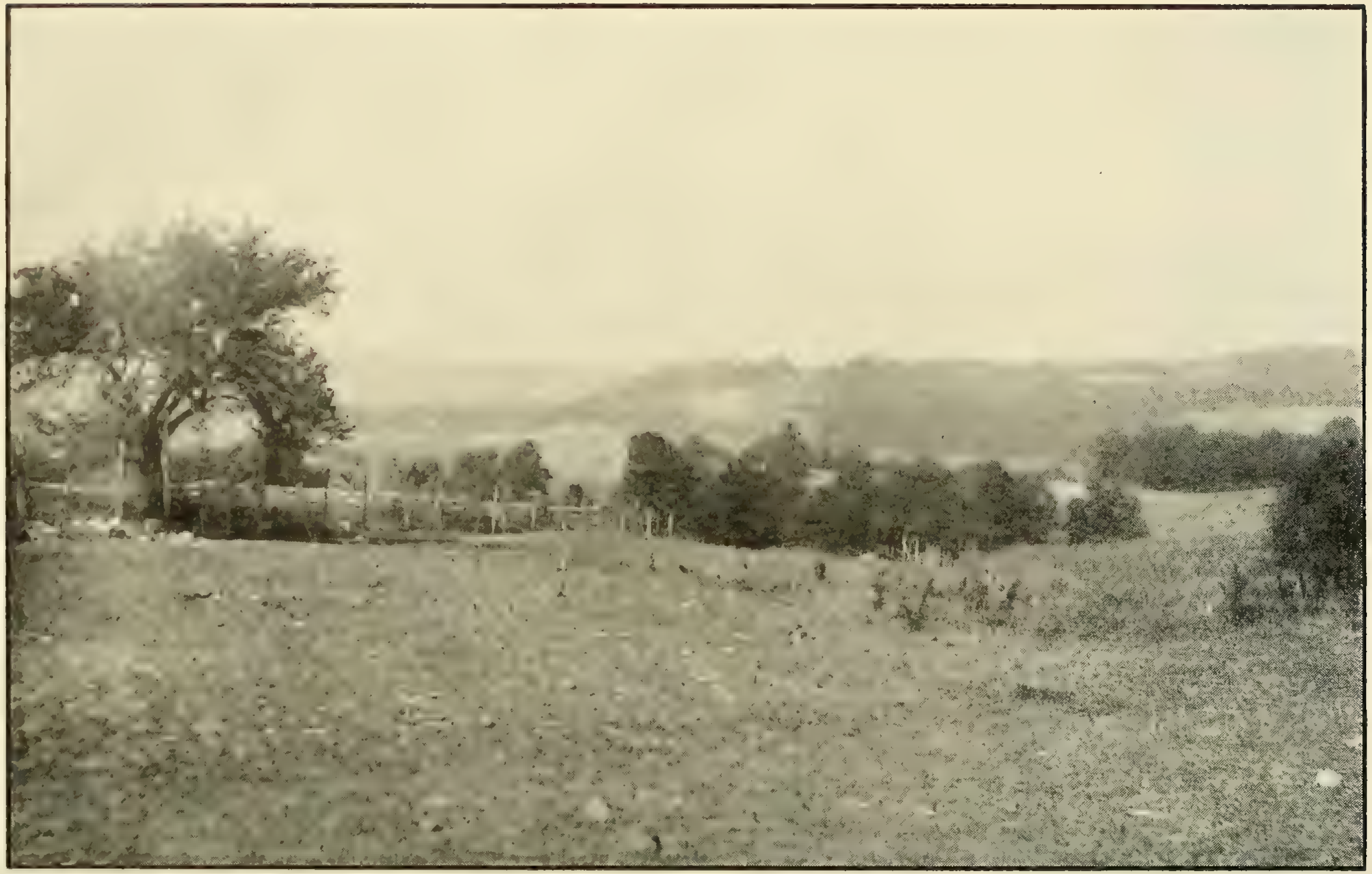
The Victor Site.

(Gandagora, Gannagaro, St. Jacques.)

This is situated on the farms of M. E. McMahon, W. B. Moore and W. J. Greene, one and one-fourth miles south of the village of Victor, on the west side of the road leading from Victor to Holcomb. It occupies the top of a steep hill (Boughton Hill), the middle of the village being on the 800 foot contour, 250 feet above the village of Victor. The hill is lobate, pointing northward, and is bounded on the eastern, western and northern sides by steep slopes which descend to the valleys of two small brooks, both tributaries to Mud Creek. A strong spring issues from the western base of the hill, and a swale on the northwest edge probably marks another. Across the valley to the westward is a steep-sided flat-topped hill, known locally as "Fort Hill". In the valley to the northwestward, distant from the village by air-line one and one-half miles, is what is known locally as the "battle field". To the south are two cemeteries, one each on the farms of Mr. George Ketchum and Mr. John Bunce.

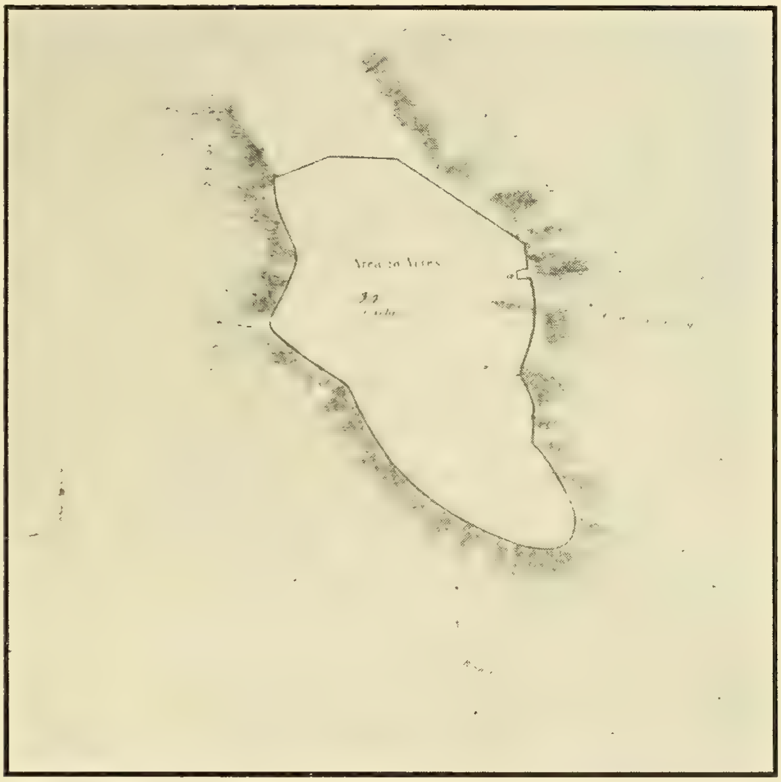
The soil of the village site is sandy and gravelly loam, in a high state of cultivation. The portion owned by Mr. McMahon is partially in an apple orchard, and there are some apple trees on the portion owned by Mr. Moore.

The entire area is covered rather thinly with refuse earth, in patches which extend from Mr. McMahon's farm partly through the northern half of Mr. Greene's and from the road on the east to the heads of the gullies on the west. Because of the cultivation which the area has undergone during the past century, or for other reasons, these heaps do not show so



The site of Gandagora, looking west. Fort Hill in middle distance. Photograph by F. Houghton.

clearly upon the surface as do those on village sites near Buffalo. The heaps are very thin also. No refuse heaps could be found on the steep hillsides bounding the site as is the case at so many other locations. A strong line of refuse heaps extends from north to south parallel to the road and seems to mark the stockade which, according to the plan made by E. J. Squier, ran at about this point. Some of these heaps are deep, and in one of them I found the remains of two bodies in such close relation to deer bones and other refuse, that I could not doubt that the human bones were refuse also. Graves 1, 2 and 3 were on the edge of this band of refuse earth.



Plan of Gandagora, by E. G. Squier, in Smithsonian Contributions to Knowledge, Vol. II, part XIV, incorrectly oriented.

From the refuse heaps come an astonishingly large number of articles, even after they have been under the plow for a century. Most of these are animal bones, scrap brass and glass and shell beads. Occasionally an iron axe is still plowed up. Glass beads are very abundant. Mr. Bement, a local collector, sold 2800 for twenty dollars and he still has a great many. Mr. Hopkins, another collector, has 3200 and two others have about 2000. All these have been found by walking over the ground after rains. The beads are nearly all of two kinds, shell wampum and glass beads of all sorts. Occasionally shell pendants of different kinds are found, also copper and brass beads, and beads and pendants made of a fine red sandstone, perhaps catlinite.

Implements of stone and antler are rare in the refuse. Local collectors have a few flint points of both the triangular and the notched patterns. No antler articles have been reported as found here except one broken antler cylinder now in the possession of a local collector. No clay potsherds have been reported from the refuse, though broken clay pipes are abundant. No implements of bone have been found. A tiny double edged stone chisel was found at the brook side at the western side of the village.

In August, 1910, I tested carefully over all the area available in an effort to locate the village cemetery. Much of the surface was tested with rod, posthole auger and spade. A line of holes was dug a yard apart on Mr. Greene's farm, following the fence line which there crosses the entire site. Though no graves were found there, an area of disturbed earth was found and tested to the depth of nearly six feet. No evidence was found of the possible use of this pit. It may have been originally a cache for corn storage.

A line of test holes was dug following the approximate location of the stockade as shown on Mr. Squier's plan. Besides the refuse heaps already mentioned, five bodies were exhumed here, two of them, as before stated, having been buried in a refuse heap. These five burials are numbered from 1 to 5 on the list following. There is no doubt that at this point more graves occur, as well as very interesting refuse heaps, but the owner's refusal to allow more digging prohibits further search.

A considerable area on Mr. Moore's farm along the western edge of the site was tested. This coincides with the area just inside the approximate location of the western stockade as plotted by Mr. Squier. Six graves were found here, numbered from 6 to 11 on the list following. There seems to be a large and very interesting cemetery here, bnt the owner refused permission to complete the excavation.

A large cemetery on the farm of Mı. J. H. Bunce, one and one-half miles south of the village, was carefully excavated. The cemetery occupied a sandy knoll in the northeastern angle formed by the Holcomb road crossing Cherry street. Across this knoll furrows 16 inches deep were drawn from east to west with a plow, and these furrows were then tested every few feet with rod, spade and auger. In this way the entire surface was turned over.

The soil of the knoll was sand and clay, the clay appearing on its northern side and containing sand pockets.

In this cemetery were found bones representing fifty-one skeletons, which are numbered on the list from 12 to 63. Of these the bones of three individuals came from a small bone pit, four from another, and twenty-eight from another.

The excavations on the village site and the cemetery showed a large variety of burial customs to have been in vogue amongst the Senecas of that period. The graves were of different depths, some being so close to the surface that some of the bones had been disturbed by the plow. Others were more than three feet in depth. This difference in depth can hardly be accounted for by the difference in soil and the greater difficulty in digging at some points. For instance, of two graves but a yard apart, one was within twelve inches of the surface, the other thirty inches deep. There was no regularity in burial, no order or special orienation being noted.

Five different methods of burial were shown to have been in more or less common use, namely, (a) individual burial at full length, (b) individual burial in a flexed position, (c) individual burials in "bundles", (d) burials of the bones of a skeleton, in whole or part, without order, (e) communal burial in a "bone pit". No evidence was seen of the burial of bodies in the upright sitting position so often noted by various collectors as characteristic of this region. Numerous interesting burial customs were shown by the articles found buried with the skeletons. Fire beds were noted over many of the graves.

Of the sixty-three individuals represented in the graves, but two were found extended at full length, and both of these were peculiar in many other ways. Both were men and evidently of local note. One was a Christian. It can hardly be said, therefore, that burial at full length was a common method of burial amongst the Senecas of that time, but more probably it was in an emergency, as in the case of a warrior or hunter found dead away from the village and brought to the cemetery for burial, or it may show the influence of the Christian priests, which is doubtful. A full length burial in the Neuter cemetery at Grand Island is similarly peculiar in that the skull was lying beside the bones of the body.

The first of these two full length burials was found on the western side of the village, and is that numbered 11 on the list. The body lay on its back, but the skull was erect, the cervical vertebrae being bent sharply upward at a right angle. The knees were drawn up so that the heel bones were almost in contact with the pelvis. The hands were on the breast and clasped an ebony crucifix, the chaplet of which lay along the right arm. On the fingers were four brass seal rings with the symbols of the crucifix. At the feet were various iron tools and hunting implements, including gun flints, a bullet, a fish hook, a bear's tooth and a knife.

The second full length burial was found in the Bunce cemetery and is that numbered 22. Only half of the skeleton was found, the portion above the pelvis being absent. It had probably been removed to the large bone-pit nearby. With the skeleton were two heaps of articles comprising gun and gun gear, pipes, paint and flint arrow points.

Of the sixty-three burials seven were flexed and lying on the side. Usually in this type, the knees were drawn up tightly to the chest and the arms doubled at the elbow, bringing the hands up before the face.

In only one individual grave were the bones buried in the position commonly called the "bundle burial". In this method of burial, which is very common along the Niagara Frontier, the bones of a skeleton are tied up into a bundle, the long bones parallel, the skull and pelvis at each end, and so buried.

In nine graves the bones were scattered and in no order. It is possible that some of these graves may have been disturbed by cultivation or by the burrows of animals. There can be no doubt, however, that some at least were as originally made. The two burials marked 4 and 5 are typical of these. In these the bones of two adults were found at the bottom of a deep refuse heap. Lying on the original soil of the site were two extremely thin skulls. Above them were most of the bones of two skeletons in a heap. The bones of one leg and the pelvis were in position, but they lay across the bones of another leg, which were reversed in position. One lower jaw was missing.

Deer bones lay amongst the human bones, one lying in actual contact with one of the skulls.

Grave number 10 is also typical of this disorder of the contained bones. It was shallow, being but twelve inches deep. The skull was missing, but this may have been struck and turned out by the plow. The pelvis and lower jaw were found together. The other bones were found scattered through the grave. The pelvis lay immediately above and in contact with the skull of the full length burial already described. A clay pipe, broken into three pieces, was found in three different parts of the grave.

In grave number 13 in the Bunce cemetery the bones were in disorder, but this disorder may have been caused by the burrowing of animals. It was thirty inches deep, in hard loamy clay. The skull was missing. The lower jaw lay upon the arm bones, but the leg bones were in position.

Of the sixty-three individuals represented, thirty-six were buried in three heaps, all of which were found in the Bunce cemetery. The first of these heaps, marked on the list 24 to 27, contained the bones of three adults and a child. The bones were mingled and seemingly in no order. The heap was but eight inches below the surface and the top layers of bones had been turned up repeatedly in plowing. Scattered through the mass of bones were wampum and glass beads and on two finger bones still remained two brass rings.

The second pit was also very shallow. It contained the bones of three young adults and possibly of a child. The bones were mingled and in no order. Under each skull were a few glass and wampum beads. Scatttered amongst the bones were other beads, an iron axe and a fine bone spoon.

The third heap was in a large deep pit. It was situated in the northeastern edge of the cemetery. It was nine feet long from east to west and seven and a half feet from north to south, being an irregular ellipse. The bottom at the deepest part was forty-six inches from the surface, and consisted of the original hard blue clay and red clay. The top of the bone mass reached the surface, as was made evident by the fragments of bone found scattered about the surface. The plow struck bones at seven inches.

The eastern edge of the pit was divided horizontally by a hard-packed stratum of clay mixed with ashes and charcoal, which separated this end of the bone mass into two distinct parts. The lower portion was thickest at the eastern side and feathered out towards the western edge of the upper heap. The bones in the lower portion under this stratum were very badly decomposed.

The entire mass of bones was covered by a bed of ashes and charcoal about four inches thick, which in cross section of the pit showed as an arch over the whole mass.

The bones which made up the mass were in no order. Most of the skulls were piled in a heap, sometimes three deep, at the southwestern edge of the mass. A few more were scattered throughout the heap. There seemed to be some arrangement of some of the long bones into bundles, though these bundles were not always apparent, and were in no order relative to one another. A few small heaps of the smaller bones were included in the mass. In a few cases typical bundles of bones, consisting of the long bones with the skull and pelvis at each end were noted.

Twenty-eight lower jaws were counted. This hardly represents the entire number of individuals buried here, as some jaws were badly broken and others were so much decomposed as to be if not unrecognizable, at least uncountable.

Many articles were found scattered throughout the bone mass. Nearly every skull was accompanied by a few wampum or glass beads, which usually lay under it. Some of these beads were scattered singly. Some were originally upon a belt which had been laid upon the bottom of the pit under the heap of skulls. A small brass kettle, scraps of a large one, a bone comb, shears, knives, a few iron bracelets, whetstones, and a button were found scattered amongst the bones. A clay kettle, broken into four parts, was taken from four different places in the heap of skulls.

In every detail this bone pit is precisely similar to one which I had discovered and exhumed a month previously at Orangeport, Niagara County, N. Y., save that in the Orangeport ossuary no articles of any kind accompanied the bones.

The List of Graves and their Contents.

EAST SIDE OF VILLAGE SITE.

No.	Posture, position, remarks.	Articles found.
1.	Head W., face N., flexed, 18 inches deep.	Brass kettle, glass beads, awl.
2.	Head W., face S., flexed, 12 inches deep.	Brass kettle, iron bracelet.
3.	Head S., face E., flexed, 16 inches deep.	Nothing.
4–5.	Double grave in refuse heap. No order. The bones of one leg aud pelvis in position, but lying in reversed order upon bones of other leg. One lower jaw not found. All other bones in a heap on skulls. Deer bones mixed with the bones, one being in contact with one of the skulls.	Nothing.

WEST SIDE OF THE VILLAGE SITE.

No.	Posture, position, remarks.	Articles found.
6.	Badly decomposed bones of child, probably flexed, 12 inches deep, fire bed over grave.	2 small brass kettles, glass, shell and stone beads, long shell beads, iron knife, in kettle a wooden ladle with a tiny bear carved on handle.
7.	Flexed body of adult, 24 inches deep, with fire bed over grave. Pelvis not fonnd.	Iron axe, knife and awl, a small steel, a bear's tooth.
8.	In no order. The sacrum and pelvis with some vertebrae lay over the skull and arms of No. 7. An atlas lay under the skull.	Iron knife and brass beads.
9.	Decomposed bones of a child, 16 inches deep.	Iron knife and 2 red beads. Cervical vertebrae stained with copper salts.

10.	Bones scattered through grave, mingled with refuse earth. No skull	Clay pipe, broken in three parts, in different parts of grave.
11.	Body full length on back, east and west. Head erect, face to east, cervical vertebrae bent up at right angles, knees drawn up sharply and fallen over to left. Hands on chest. Directly under No. 10, the pelvis of No. 10 in contact with skull. Tibia and fibula have spur-like projections.	Five brass rings on fingers. Crucifix and rosary in hands. Beads across vertebrae, possibly a belt. At right ankle 3 iron chisel blades, gun flints, bullet, iron fish hook, bears' teeth, iron spoon, knife, awl, whetstone.

Cemetery on the farm of John Bunce, Victor, N. Y. Photograph by F. Houghton.

CEMETERY ON BUNCE FARM.

No.	Posture, position, remarks.	Articles found.
12.	Badly decomposed bones, 12 inches deep.	Gun lock, knife, awl, red paint, iron pyrites.

13.	No order. Bones in 20 inches of clay. Leg bones in place. Lower jaw with the arm bones. No skull.	Pipe of wood and brass, carved to represent a lizard; shears, chisel, knife, small wrapped package.
14.	Bones decomposed and in no order, 18 inches deep.	Nothing.
15.	Decomposed bones with fire bed over grave.	Nothing.
16.	An empty grave.	Clay pipe.
17.	Decomposed bones, flexed.	Flint and pyrites, stem of pipe, bears' teeth.
18.	Flexed, head west, face south, 12 inches deep.	Brass kettle and knife.
19.	Scattered bones. No skull found. 24 inches deep in clay.	Brass kettle and few beads, bullet, vermilion paint, flint, two knives, mica.
20.	An empty grave, possibly bones were decomposed.	Brass kettle.
21.	Bones scattered.	Nothing.
22.	Skeleton at full length, lying northeast and southwest, 21 inches deep. Upper part of body above pelvis not found. Articles in two deposits, one along right side, other between the knees.	Gun at right side. At right knee 3 pipes, flint and steel, 2 large beads, evidently ornaments on a bag which held above. Above right ankle, a little red and yellow paint, remains of an iron pot full of lampblack, 20 triangular flint arrow points, gun flints, bullet mould, flint and steel, shears, iron spear point, iron spit, 2 knives, 3 whetstones, bear's teeth and claw.

23. Empty grave, represented by a foot, an arm and a hand of an adult.	Iron knife, shell bead.
24 to 27. Heap of bones in a pit 3 feet long and 3 feet wide. Mass was 12 inches thick and the top was 8 inches from the surface. Bones of three adults and a child in no order, all the bones being mingled.	Wampum, glass and shell beads and pendants, 2 brass rings on finger bones. A long thin coiled brass wire spring. These were scattered throughout the mass of bones.
28 to 30. Heap of bones in a pit representing the bodies of three young adults or older children and possibly one young child.	Wampum beads under the skulls. A small bone spoon, an iron axe, hawk bell, shell beads and pendants.
31 and 32. Bones of an adult and a child, mingled.	Nothing.
33. A heap representing one body in a typical "bundle burial".	Kettle bail and a bird bone.
34 to 62. Heap containing bones representing at least twenty-eight bodies. See description of this ossuary on a previous page.	
63. An empty grave, 7 inches deep.	Whetstone, decayed bone comb and an iron spit.

The Fort Hill Site, Victor.

This is on the flat top of a steep sided sand hill, one and one-half miles west of Gandagora, on the opposite side of the valley. No vestiges of occupancy can now be seen. Old settlers claim that fifty years ago a breastwork of earth could plainly be seen around the site. This earthwork was mentioned and plotted by Mr. O. H. Marshall. (*) A strong spring issues from the base of the hill on the eastern side.

This corresponds accurately to the "little fort" which Denonville burned after it had served as a base for the Senecas

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(*) O. H, Marshall, Historical Writings, p. 137.

who fought him near the village. A hollow tree fell many years ago on this area and it was found to contain a large number of old gunbarrels.

The Beal Site.

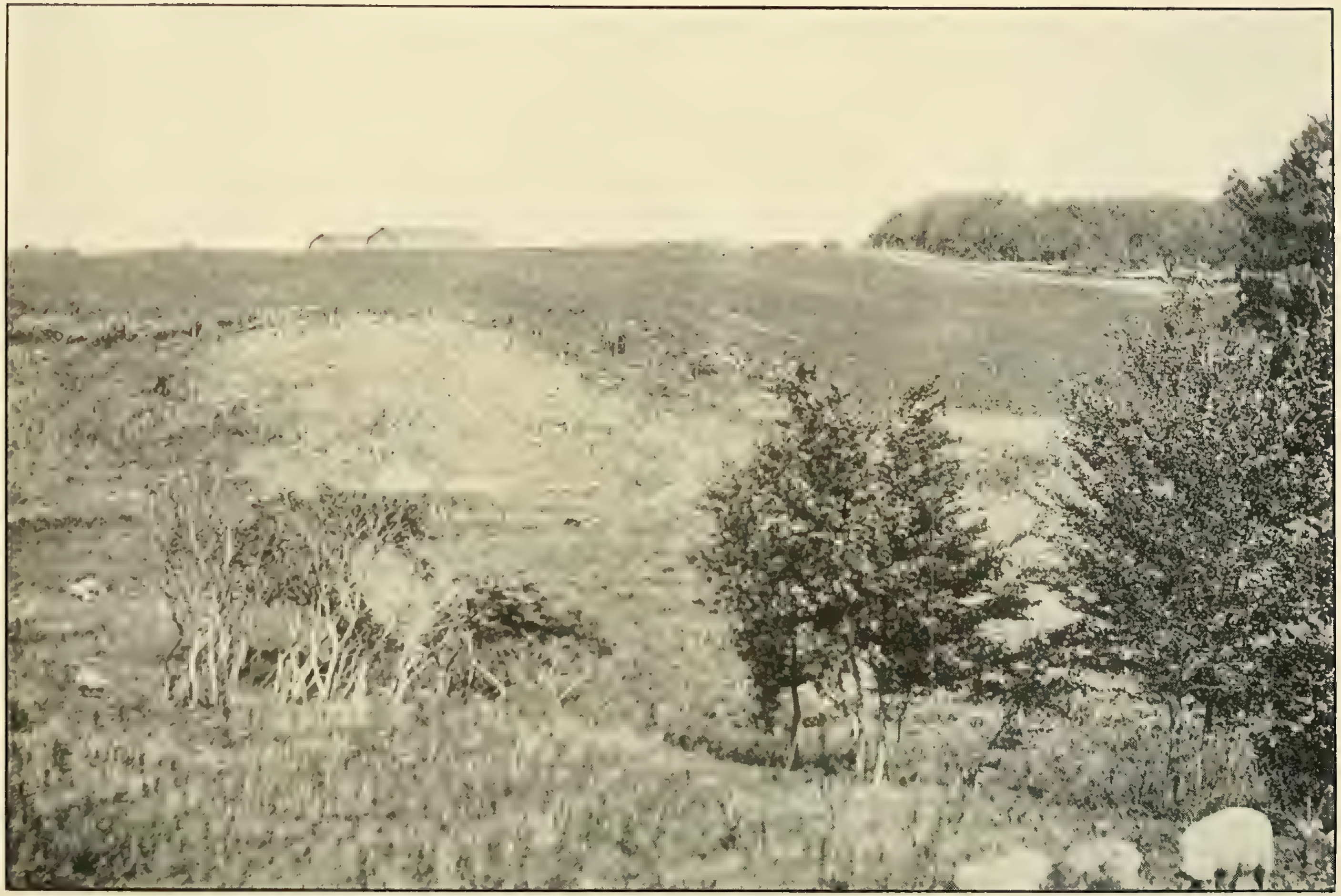
This site is on the farm of A. N. Beal, on the south side of Cherry street, half a mile west of the main road from Victor to Holcomb. It is in East Bloomfield, Ontario County, the road which passes it being the line of division between Victor and East Bloomfield. It is one and a half miles south of the site of Gandagora on Boughton Hill and a mile west of the cemetery on the farm of John Bunce, which I excavated in 1910. It occupies an irregular knoll, is surrounded on three sides by brooks, which, however are dry in summer, and covers perhaps fifteen acres. The soil is clay loam underlain by heavy red clay, in which are sand pockets.

On the surface are numerous rather thick refuse heaps, which contain abundant articles. Glass beads, clay pipe fragments of Indian and European make, some clay potsherds, shell pendants, gun flints, points, and numerous bullets and gun fragments are turned up every spring. I secured a number of articles from these refuse heaps from a boy who lives there.

Skeletons had been found on the edge of the site at the crest of one of the knolls into which it is divided. This is now under cultivation and I was unable to test at the exact spot where they were found, but I tested unsuccessfully as near to it as I could come.

Burials were finally found on a lobate knoll on the western edge of the site where no signs of graves or occupancy had ever been found up to that time. They were unusually deep in clay or in the sand pockets. The clay was so hard that my rod was practically useless and accordingly test holes were put in with the post hole digger a yard apart at first, but later still closer, until the entire knoll had been explored. Testing was made simple by the fact that every burial was marked by charcoal at the depth of a foot or more. Thirty-four bodies were found.

The burials of this site are mainly of bones rather than of entire skeletons. Many were in pits of which 5 were found, some containing as many as six bodies. But two skeletons were



Village Site on the farm of A. N. Beal, East Bloomfield, N. Y.   Photograph by F. Houghton.

found in the usual flexed position. Two were found lying extended on the back, but only the lower portions of these were found.

Cemetery of village on the A. N. Beal farm. Photograph by F. Houghton.

A detailed list of burials follows:

Body.	Depth, posture, etc.	Articles.
No. 1 to 6, in pit.	36" in clay and sand. Bones decayed. One bundle standing upright, all other bones scattered.	2 rings on a finger bone. Glass beads.
No. 7.	Single grave. Pelvis and leg bones in position for a body flexed, but skull faced pelvis and all other bones of upper portion of body in a heap beside head. Pelvis removed a foot away from femur. One arm in position.	Iron ax below pile of bones, knife and awl at feet. Berry seeds at right thigh.
No. 8.	42" deep, clay. Young male, flexed. Badly decayed. Head E., face S., flattened.	Vermilion strewn in grave. Wampum in lower jaw. Bag of

	gunpowder behind pelvis, with lead, powder horns, bullets. Gunlock and extras above head. Knives and bullets in grave, half way down.
No. 9. Lower than No. 8 in same pit. Pelvis and leg bones in position, extended on back, feet south. Pelvis at ribs of No. 8.	Pelvis covered with wampum which adhered to the clay showing a belt of 8 rows. Brass points on bark beside pelvis. Flint points 8" from the brass points between No. 9 and No. 10.
No. 10. On east side of pit below No. 8. Extended on back, feet to south. Upper part of body from middle dorsal absent, left arm in position.	Brass kettle on knees, lying on bark, blanket and robe, covered with bark. Two combs in folds of blanket. At feet 3 clay kettles on sides and iron kettle.
No. 11. Skull at 18". 12" north a femur on a piece of brass kettle, 18" north tibias and humerus. Behind skull a humerus.	Berry seeds at face. Behind skull a heap of articles. Pipes, pistol barrel, short sword, ax, knives.
No. 12. Represented by a thin black layer, 3 feet deep. In the layer were a few very much decayed bones and some articles. Above the layer in the clay scattered bones. Portions of skull appeared at various points.	Flints and scraper, shears, bell, 3 rings, wooden pipe. Bear pipe.
No. 13. 14. 15. 16. } Pit with bones of four bodies. 42" in clay. All bones badly decayed. One skull, a pelvis and bundle of two sets of long	Red paint throughout the pit. Bundle of eight rings. Tin box, steel, etc.

	bones on east edge. One skull with arm bones and ribs at north edge. One skull at S. E. edge. One at west edge under large stone. A large boulder lies between this and No. 8, 9 and 10.	
No. 17.	Single grave. Young adult, flexed, but only skull and leg bones remained. Head E., face S.	In front of skull a small brass kettle containing wooden ladle and food.
No. 18.	Single grave, adult. Skull and lower jaw in position. Other bones decayed and scattered. Pelvis on west edge of grave.	Iron knife in front of skull. Ax 3 feet north of skull.
No. 19.	Single grave of child. 18" deep. Bones entirely decayed.	A few copper beads. Knife.
No. 20.	Single grave of adult. Large and thick charcoal deposit above grave. Bones entirely decayed, body represented by a black streak.	Glass beads, pipe stem.
No. 21.	Single grave. Child, very shallow. Bones decayed, body represented by black streak.	String of glass beads, loose beads, 2 knives, lead seal.
No. 22. 23. 24. 25. 26.	Pit. Two feet deep. Two skulls lying together at western edge of pit, 2 skulls on southeast edge, child's skeleton at northern edge, legbones on east edge.	Glass beads.
No. 27.	Single grave. 12" deep. Skull on east edge, leg bones on south edge. Rest scattered.	Nothing.
No. 28. 29. 30. 31.	Pit. Three skulls at north edge with pelvis and femur. All other bones on southern edge and eastern edge in an area of six feet.	Glass beads near skulls. Two knives.
No. 32.	Skull shallow and decayed. Rest of skeleton nine inches deeper. All bones in position except skull. No	Iron knives and whetstone.

lower jaw. Bones well preserved. Flexed.	
No. 33. Leg bones only.	Knife.
No. 34. Empty grave. No bones remaining.	Paint throughout. Glass beads.

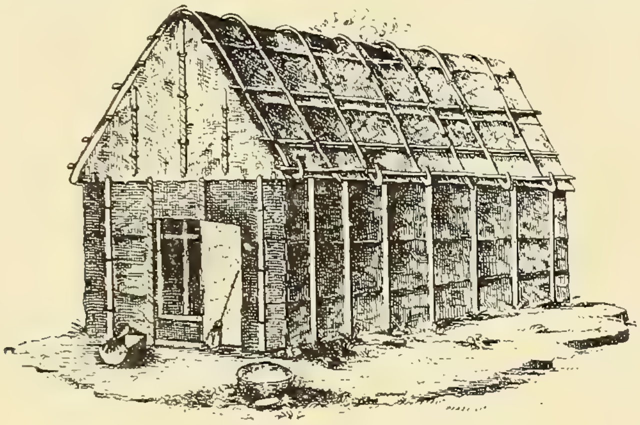
Cache of articles, 16 feet east of grave No. 7. Four feet deep, bottom on red clay. The hole was very narrow. No bones near. Awls, knives, a brass spigot, a round box of vermilion paint, a European comb.

Life of the Senecas from 1655 to 1687.

Archeology and history show that the whole period from 1655 until 1687 was one of European domination. The Senecas seem to have come in contact with traders from both New Amsterdam and Quebec very early and by 1655 they had come to depend upon the traders for nearly every article in their whole economy. For them the Age of Stone had come to an abrupt end, possibly a whole generation before Father Chaumonot had entered their country, at a time when their chief towns, the predecessors of Totiakto and Gandagora, were far up in the hill country at the headwaters of Honeoye Creek. The hotheaded young warriors who made the desperate attempt to stop Denonville's army were far removed from the age in which their grandfathers chipped their rude weapons from the chert which they picked up in the nearby creek bottoms, and they were as dependent upon the armories of England as were the soldiers of the French governor upon those of France.

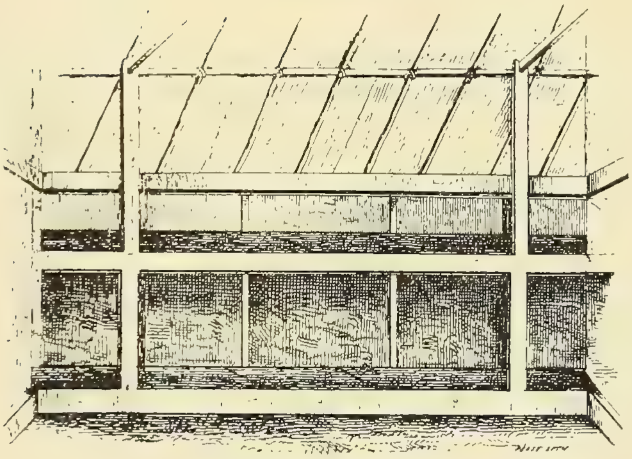
The village sites of the period were selected with care, two conditions being essential, namely, ease of defense and fertile soil. Several of the villages were situated upon high hills, others were partly surrounded by gullies. Gandagora was on a hill which rises two hundred and fifty feet above the surrounding valleys. Totiakto was in the bend of Honeoye Creek, which defended it on two sides. The earlier sites were similarly placed. The creek bottoms and upland plains which surrounded Totiakto and Gandagora were fertile and entirely suited to the raising of corn. Nearness to water though essential was not a primary consideration. The water supply of the large villages was from springs. A few depended upon streams. The strong springs which supplied Gandagora, Totiakto, and the early site at Richmond Mills, still gush freely.

Of the great towns, some at least were palisaded. Father Garnier, after the burning of Gandougarae in 1670, was promised a chapel as soon as the new cabins and palisades were complete. Galinee described the palisades of the eastern village in which he stayed with LaSalle, and his desciption has already been quoted.



GÄ-NO-SOTE
or
BARK HOUSE.

A Seneca House.



Interior View of
BARK HOUSE.

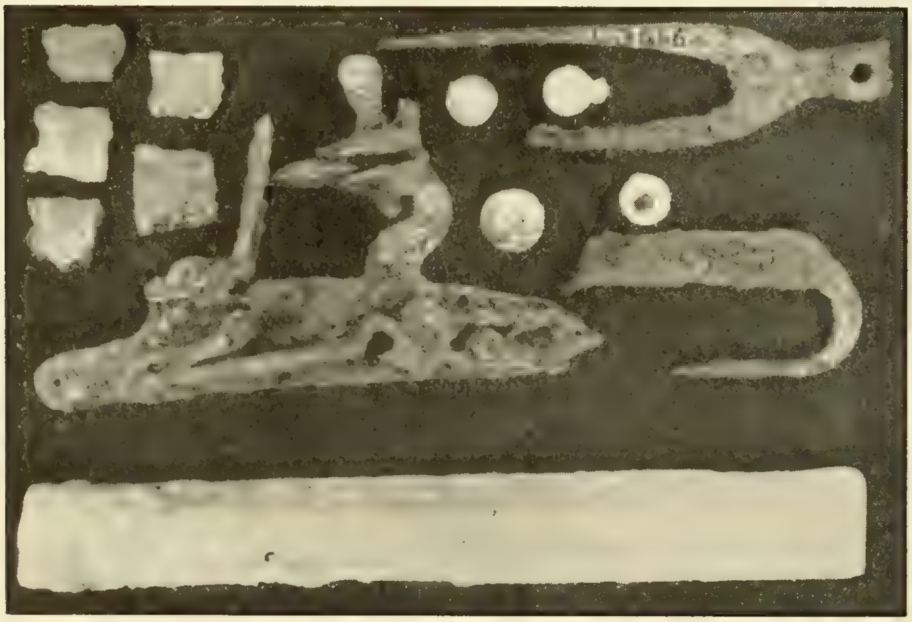
Denonville found the arms of the King of England on the gates of the town of Gannounata in 1687. Gates imply a wall or palisade. The small fort near Gandagora, which the Senecas used as a base in Denonville's time, was probably a palisade, though earthworks and a trench were visible there as late as 1858. Greenhalgh, however, definitely states that none of the towns of 1677 were defended.

No remains of a Seneca house of the period have been preserved for us. Their sites are undoubtedly marked by the deep ash beds and refuse heaps of the great sites. Greenhalgh described the houses at Totiakto as being the largest in all the Iroquois cantons. His description has already been quoted.

In the center of one of the two large towns was a square, in which, according to Galinee, prisoners were tortured. Inside the palisades of Gandagora were large bark receptacles used for storing corn.

Of such corncribs Lafitau wrote: "At Tsonnontouan they make bark granaries round and place them on elevations, piercing the bark from all sides so that the air will get in and prevent the moisture from spoiling the grain." (*)

Various visitors to the Senecas described them as being fierce, untiring warriors, professional trappers and hunters, and very successful farmers. Archeology supports and corroborates these accounts.



Gun-lock, flints, bullet mould and bullets, bar of lead and steel for striking fire.

The equipment of the Seneca warrior and hunter of 1687 differed materially from that of his grandfather of 1600. The warrior of the Stone Age armed himself with home-made bow and stone tipped arrows. By 1650 these had been relegated to the rubbish heap, and in their place the warrior carried a "miserable gun" with its accoutrements, a good European knife, and perhaps an iron ax. One such outfit was found with the body of a man in the Bunce cemetery at Victor. The gun was a flint lock musket, six feet long, the European flint being still in position. A bag contained five extra flints, some swan shot and a bullet, a bullet mould, flint and steel. Beside the body lay a good knife with a carved bone handle, the remains of a sheathed dagger or short sword, an iron harpoon point, a large steel and a piece of flint for striking fire, red, yellow and black paint, scissors, possibly to trim his hair, three flat sandstone pebbles, and a heap of beautifully made triangular arrowpoints.

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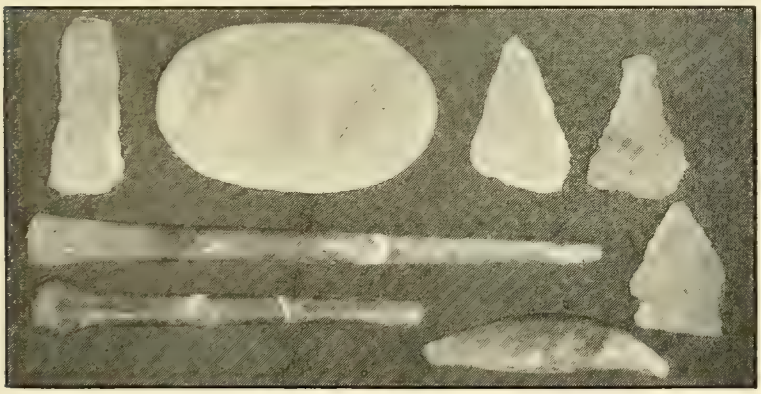
* Lafitau, Moeurs des Sauvages, Vol. II, p. 80.

All the people had not yet adopted European arms. A few, old-fashioned or ultra-conservative, still clung to their Stone Age articles. Some, though armed in modern fashion with gun and ax, still carried their flint points and chipping tools.

An old man and a young woman, perhaps his daughter, were buried together at Gandougarae in a double grave. The girl's body was bedecked with her necklace of glass beads and bracelets of brass and iron, and a wide wampum belt encircled her waist. Yet at the old man's feet the mourners placed his entire flint chipping outfit, his chipping tools of antler, some blocks of chert, some unfinished work and a point.

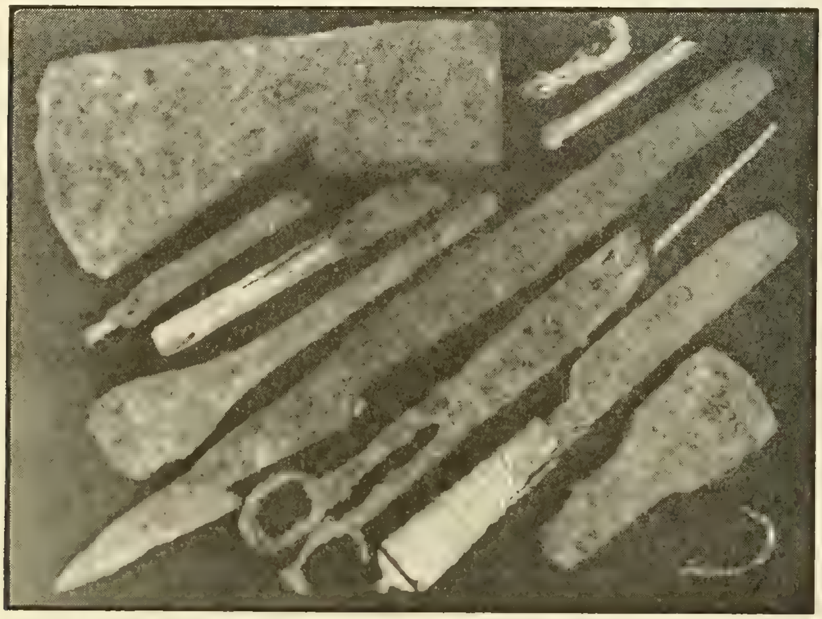


The complete outfit of a flint chipper.

Two persons, both of prominence in the village on the Beal farm, took with them to their graves, chipping outfits and flint, though in both cases the flint was not of local origin. One had points of flint evidently chipped from European gun-flints.

Many European articles were not brought to the Senecas in the regular course of trade, but as presents at councils. At the council in the eastern village at which LaSalle asked for a guide to the Ohio, he gave as three presents a double barreled pistol, ten kettles, twelve hatchets, four dozen knives and at least six pounds of glass beads.

Few records remain of the exportation of peltries. In 1632 the Dutch ship "Eendracht" was seized by the English and was found to contain five thousand beaver skins. In 1645 a Dutch ship arrived at Amsterdam with 2137 beaver skins. Governor Dougan complained in 1687 that the fur trade of New York had fallen off from 40,000 beaver skins besides other peltry, to 9,000 beaver and a few hundred other skins.



European articles. Ax, knives, shears, spoon, awl and fish hooks.

French goods were much higher in price than English goods of the same quality.

In 1724 Cadwallader Colden and others prepared a report on trade in which it was stated that the staple cloth called "strouds" was sold "at Albany for 10£ a Piece. They were sold at Montreal before this Act took Place, at 13£, 2s, 6d., and now they were sold there for 25£ and upwards." Colden also states in "A Memorial Concerning the Furr-Trade of the Province of New York" that "generally all the Goods used in the Indian Trade, except Gun-Powder, and a few Trinkets, are sold at Montreal for twice their Value at Albany.".

A good list of trade articles appears in the list of articles given by William Penn in exchange for land, July 15, 1682. These seem to have been staple articles of trade with the Indians:

> Three Hundred and ffifty ffathams of Wampum, Twenty white Blankets, Twenty ffathams of Strawdwaters, Sixty ffathams of Duffields, Twenty Kettles, ffower whereof large, Twenty Gunns, Twenty Coates, fforty Shirts, fforty payre of Stockings, fforty Howes, fforty Axes, Two Barrells of Powder, Two Hundred Barres of Lead, Two Hundred Knives, Two Hundred small Glasses, Twelve payre of Shooes, fforty Copper Boxes, fforty Tobacco Toungs, Two small Barrels of Pipes, fforty payre of Sissers, fforty Combes, Twenty ffower pounds of Red Lead, One Hundred Aules, Two handfulls of ffishhooks, Two handfulls of needles, fforty pounds of Shott, Tenne Bundles of Beads, Tenne small Saws, Twelve drawing Knives, ffower anchers of Tobacco, Two anchers of Rumme, Two anchers of Syder, Two anchers of Beere, and Three Hundred Gilders.
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> Penna. Archives, Vol. I, Series 1, p. 47.

The chief source of revenue of the Senecas at that time consisted of the furs brought in by their hunters. The local sources of supply seem to have been depleted or completely exhausted by 1670, for mention is made of the party which left one of the villages to go to the northern shore of Lake Ontario after beaver, and which was to be absent nearly a year. Father Fremin, in the Relation of 1669, said: "The greater part of the people who belong to the Villages where we are settled are at war or out hunting during nine months of the year." The absence of a large proportion of the hunters of a village would mean a lack of animal food during much of the year and this is noted by Galinee, who says: "The great dish in this village, where they seldom have fresh meat, is a dog." As a consequence, animal bones are much less abundant in the refuse heaps than in those of older Stone Age villages. The teeth of bears are occasionally found in graves, and seem to have served some purpose. Possibly they were trophies or the contents of charm bags. The skulls of small animals which were found in some graves, preserved by brass with which they lay, seem to have been the heads of animals the skins of which formed a fur robe, the heads serving as ornaments.

Farming was carried on on a large scale. There is no doubt that the fertile lands about the villages were tilled by the Senecas, rudely perhaps, but remarkably successfully. In the absence of animal food, the food of the people must necessarily have been largely vegetable, and though some of this was gathered from the fields and forests, the most of it must have come from the cultivated fields of corn, squash and beans which surrounded the towns.

Corn in a charred state is still to be seen in the refuse heaps of the villages. An ear was taken from a grave at Gandagora. Stores of it were kept in bark receptacles and possibly in underground caches. Denonville burned an immense amount of old stored corn in July, 1687, and chopped down all the corn fields which could be found near the towns. He estimated the quantity at 400,000 minots, or about one million two hundred thousand bushels.

In a brass kettle in a grave at Gandagora were found the seeds of a melon or cucumber. This corroborates French accounts of the melons which they found amongst the Senecas. Father Beschefer sent to France in a box of curiosities "seeds of Canadian watermelons which grow without requiring any care like squashes in France."

Pigs were kept by the Senecas of this period and were mentioned by de Denonville.

Practically no tools for cultivating the soil have been found. Iron hoes have been found on the Dann farm. In all probability hoes made of wood were commonly used and these would not be preserved.

The Senecas eagerly bought from both French and Dutch and later from the English, large quantities of liquor. From the French traders they obtained brandy, from the English traders rum. The missionaries noted an increasing demand for liquor and a consequent increase in drunkenness. In the later years of the missions, it was reported that not only were the men frequently drunk, but that the women, who hitherto had not been addicted to drunkenness, were frequently to be seen intoxicated, and that even children were allowed to drink to excess. The occasion of the return of a party from Albany was always the scene of a drunken orgy, and crimes committed by drink-crazed Senecas were condoned because the criminal was intoxicated. The preparations for the departure of a hunting party to the wilderness was similarly a time for a wild debauch.

There can be no doubt that the Senecas practised cannibalism. The accounts of Galinee and Greenhalgh expressly state that the flesh of tortured prisoners was eaten. Hennepin states that children were given the blood of captives to drink.

There can be hardly a doubt that the two skulls (Numbers 4 and 5) found in a refuse heap at Gandagora in immediate contact with the bones of deer were those of captives who had been dismembered and probably eaten.

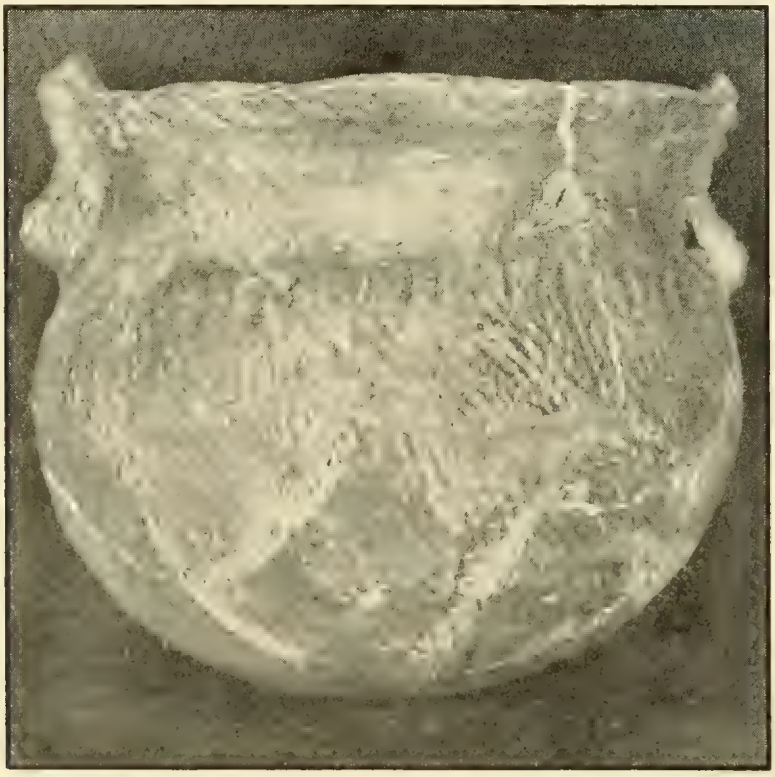
Greenhalgh during his stay at Gandagora witnessed the torture of captives. He says of it: ''Thatt day at Gandagora there were most cruelly burnt four men, four women and one boy. The cruelty lasted seven hours. When they were almost dead setting them loose to the mercy of ye boys and taking the hearts of such as were dead to feast on.'' When LaSalle and Galinee visited the Senecas, a captive was put to death, but these two, fearing violence, left the village. Some of the Frenchmen of the party stayed, however, out of curiosity, and their description of it has been preserved by Galinee, who says: ''At last after two hours of this barbarous amusement they killed him with a stone and afterwards everyone throwing himself upon him, tore him to pieces. One carried off his head, another an arm, a third some other limb, and everyone hurried away to put it in the kettle to feast on it.''

The preparation and serving of food was probably much the same as they were in earlier days of the Stone Age. European steels were in fairly common use for striking fire. Three came from graves at Gandagora. The older and more primitive method of making fire by striking iron pyrites against flint was still in use. Several sets of pyrites and flint were taken from graves at Gandagora.

European brass kettles had nearly supplanted the aboriginal clay kettles, and even their high cost did not prevent the Seneca women from taking advantage of their lightness, convenience and wearing qualities. Consequently a great many are found on all the sites of the period.

They are the commonest articles found in graves. There is a story amongst the collectors in Victor that a collector found on the main village site of Gandagora a nest of nine kettles of graded sizes, evidently just as some trader had cached them. Those in the graves range in size from one as small as a teacup, which was found in a child's grave at Gandagora, to one ''nearly as big as a bushel basket'', said to have been found in a grave at the Factory Hollow site. The commonest kettle seems to have been one holding about six or eight quarts. Many kettles show the evidences of hard usage. Some have been patched to repair a leak, the patches being usually riveted on. Brass kettle ears and scrap brass are fairly abundant in the refuse heaps of all the sites.

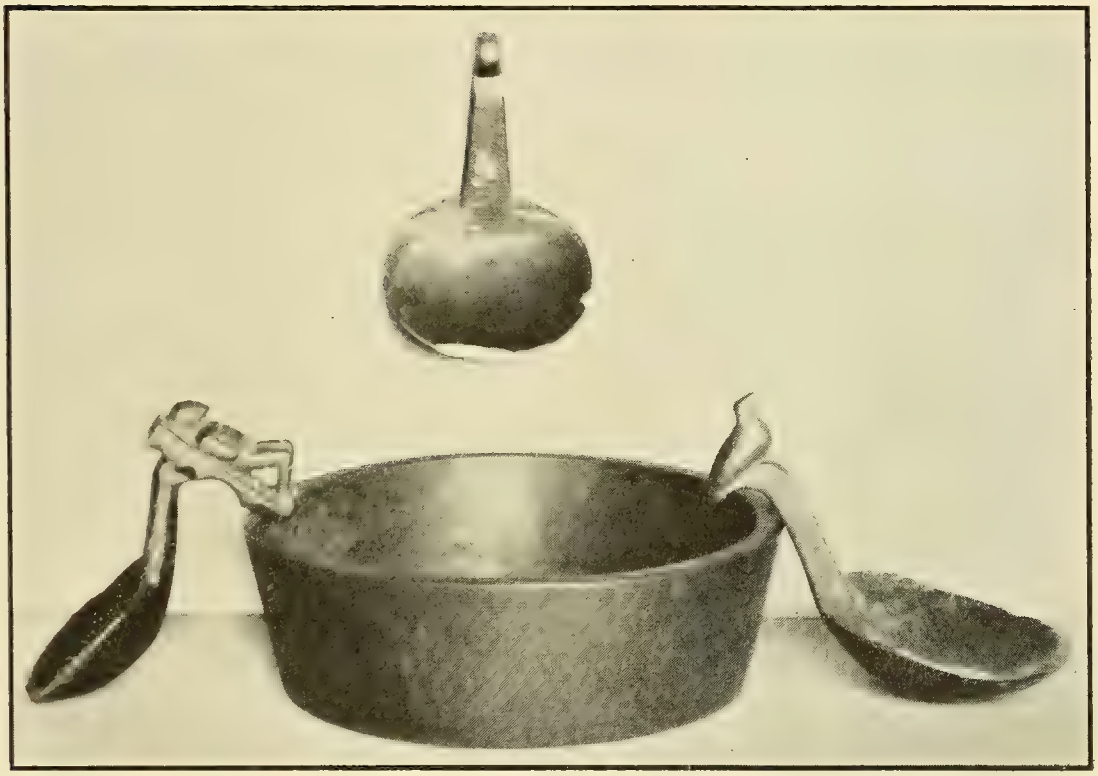
The abundance of clay kettles in graves of the Seneca sites is worthy of notice. They have been found buried with the dead on the Dann farm where they are numerous, on the Factory Hollow site, and the Warren farm, where they are numerous, at Gandagora, where but one has been found, at Lima and at the small cemetery north of Lima, and in the cemeteries at the Beal farm and at Gandougarae. This seems to show that clay kettles were in common use when these villages were inhabited, yet the refuse heaps, to which fragments of broken kettles eventually found their way, do not always corroborate the evidence of the graves. No potsherds are reported as ever having been found in the refuse of Gandagora, Totiakto, Gandougarae or the Dann farm. The deep refuse heaps which spill over the edge of the escarpment bounding the Factory Hollow site are full of potsherds. The people of the later villages seem to have discarded them in household use, but to have continued putting them into graves. The one found in the bone pit of Gandagora seems to



A clay kettle from the Beal site.

have been originally buried in some individual's grave, and to have been taken with his bones when these were removed from their first resting place for re-burial in the pit. It was found in three pieces in three different parts of the pit. On the Beal and DeLong sites clay kettles were found in original burials.

For serving and eating, wooden spoons and ladles were in common use as they still are among the Senecas. The fragments of a wooden ladle, the handle of which is carved to represent a tiny bear, came from a brass kettle in the grave of a child on the site of Gandagora. It was of the usual Seneca type, resembling a butter ladle in shape. The fragments of another came from a brass kettle in which were berry seeds.



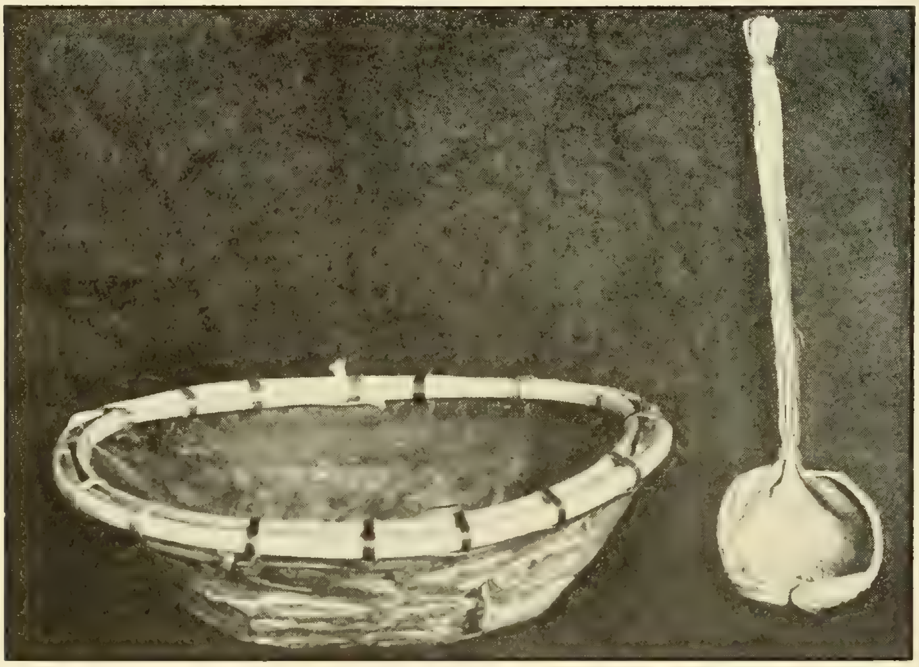
Modern wooden bowl and ladles.

Fragments of wooden ladles are numerous at the Dann farm, and in the cemeteries on the Beal farm, the DeLong farm and the Marsh farm.

Some spoons were made of more substantial material. One made of bone came from the Bunce cemetery. A very large one, the zig-zag handle of which represented a snake, was taken by Mr. Hamlin from a grave on the Marsh farm. Mr. Dann has two with long handles.

European spoons seem not to have been in extensive use at this time. One iron spoon was found in a man's grave at Gandagora. Metal spoons were found on the Dann farm, one an "Apostle" spoon, with the figure of one of the apostles on the handle. A copper ladle was one of the articles found there.

Food was served in bowls and on plates. The bowls seem to have been mostly of bark, of the pattern still to be seen on the Cattaraugus Reservation, though some wooden ones came from the Dann farm, and from Gandougarae.



Modern bark bowl and ladle.

Father Beschefer's box of curiosities contained besides seeds, "24 bark dishes of various sizes", and "2 wooden spoons." (*)

Bowls, platters and spoons were not always as clean as they might have been. Galinee stayed in the eastern village for some time and left a good description of his food and how it was served. He says: "The great dish in this village, where they seldom have meat, is a dog, the hair of which they singe over the coals. After scraping it well they cut it in pieces and put it into the kettle. When it is cooked they serve you a piece of three or four pounds' weight in a wooden platter that has never been rubbed with any other dish-cloth than the fingers of the lady of the house which appear all smeared with the grease that is always in their platter to the thickness of a silver crown. Another of their greatest dishes is Indian meal cooked in water and then served in a wooden bowl with two fingers of bears' grease or oil of sunflowers or of butternuts upon it.''

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* Jes. Rel., Vol. LXIII, p. 289.

European knives were in common use. Many, found in the graves of various sites, have carved bone handles and seem to have been the usual knives of the period in households in England and Flanders, and to have been staple articles of trade with the Indians.

Several short pieces of iron rod an eighth of an inch thick seem to have been spits for roasting. In one village, while torturing a native, an old woman heated one of these iron spits red-hot and thrust it into him.

To cut wood the Seneca women used iron axes bought from the traders. Many of these are to be found in graves. An immense number has been taken from the surface of some of the sites, if reports are to be credited. A few are still found in the refuse heaps. These axes are much smaller than those usually seen on sites along the Niagara Frontier. They have no marks by which we may be enabled to tell whence they came. Dented and flattened heads give evidence that they have been used as hammers.

We have no description of the clothing of the Senecas of the period. For occasions of state, fur robes seem to have been used. European cloth was in use, possibly in quite common use, for the stock of traders included a great deal of cloth. French presents to the Senecas usually included coats or cloaks. In a few graves at Gandagora, and in others at the Dann farm, pieces of blanket have been found, preserved by reason of articles of brass lying in contact with them. Denonville's men, after the battle near Gandagora, found many blankets where the Senecas had abandoned them in their flight. Belmont in his description of the ambuscade of Denonville's force says: ''We found two or three hundred wretched blankets, several miserable guns . . . . .'' In the great bone pit at Gandagora was found a black button, similar to those worn by priests on their cassocks. At the Dann farm another was found.

Before the coming of the traders the Senecas used bone awls for sewing, and sinew for thread, for at the Stone Age sites at Richmond Mills and at the Cleary farm at East Avon bone awls are numerous. They seem to have adopted eagerly the iron awl and discarded the bone awl, for on all the later sites iron awls are abundent while those of bone have been taken from two graves only at Gandagora and at the DeLong farm. European needles have been found on but one site namely at the DeLong farm.

Tobacco was in common use. Pipes have been found on the earliest Seneca sites and they become more and more abundant on the later sites. Ceremonial smoking seems not to have been practiced in early times, at least not in public functions as was the custom in later times. No ceremonial pipe has been found to my knowledge on any site ante-dating 1687, which corresponds in any way to the elaborate ''calumets'' of the Senecas of Sir William Johnson's time. Yet on all Seneca sites pipes are numerous and in some cases elaborate.

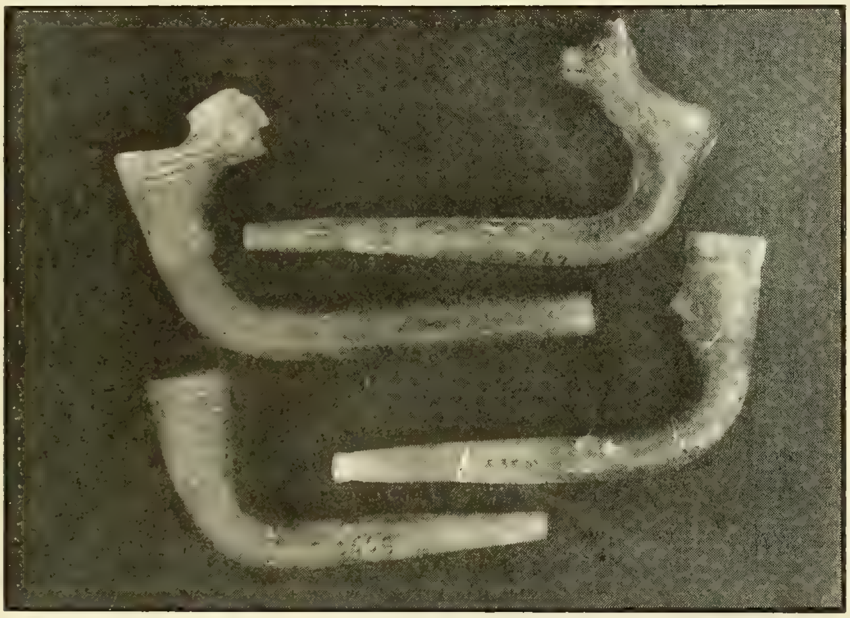
Four materials were utilized in making pipes, namely wood, bone, stone and clay. Of these clay was most and bone least used. Mr. Kirkpatrick has a small acorn-shaped bone pipe which he found on the site of Totiakto. Two wooden pipes, the fragments of which are preserved by their brass lining, were buried with their owners, one on the Beal farm, the other on the Bunce farm. One has as a decoration a well carved lizard which peers above the bowl and whose body lies along the bowl and stem.

Stone pipes are comparatively rare. A few came from graves on the Dann farm. One was found in a grave on the Beal farm.

Clay pipes are numerous, and are well made in a great variety of forms. Many are simple and unornamented save by simple designs in line and dot patterns. Others are elaborately molded in the shape of various figures. The most abundant motifs are animals, the bear being perhaps most numerous. Human effigies are fairly abundant. Bird forms are occasionally found. The snake was used infrequently.

Many of these pipes seem to have been made by the same persons and this leads to the doubt as to their being of Seneca origin. There is no doubt that all these pipes were formed by hand and not in a mold. There may exist a great similarity between two pipes, yet there are always differences in their form or design to mark them as individual rather than from the same mold. Yet these similarities are such as to warrant the belief that either the same person made them, or that they are different persons' expression of an identical idea.

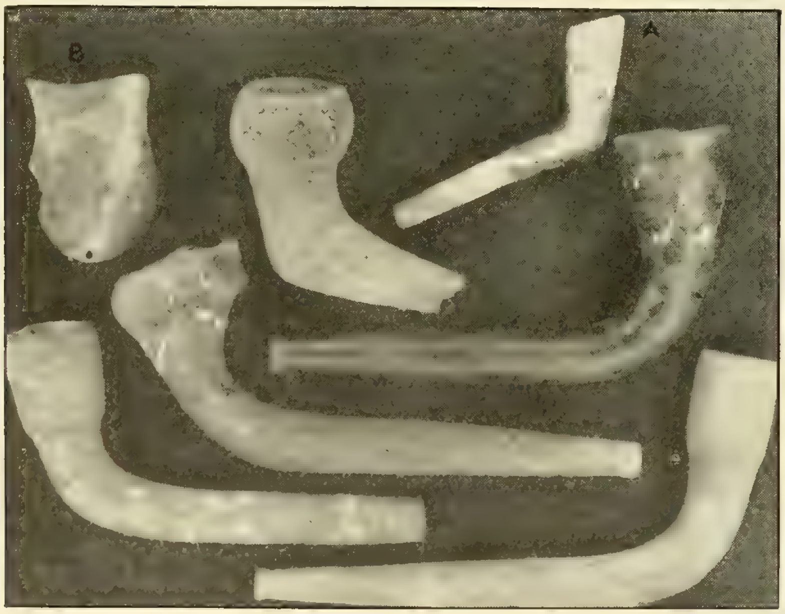
For instance, from a grave on Grand Island came a very rude clay pipe, around which is coiled a snake. This is merely a spiral ridge, terminated by an oval containing two tiny depressions for eyes. A similar one is from Totiakto, owned by Mr. Smith of Honeoye Falls. This also, is rude, and about it coils the same conventional serpent. A third was found at Cattaraugus Creek by State Archeologist Parker. In these three, not only were they found miles apart, but apparently years apart, for the grave at Grand Island can hardly be anything but Neuter, ante-dating 1650, and that from Totiakto must be at least twenty years later.



Seneca clay pipes.

Immense numbers of European pipes were used at this time by the Senecas. These are the cheap, white clay pipes still in use. Entire pipes of this type are rare, but one was found in grave number 11 on the Beal farm with three Indian pipes. On later sites pipes made of lead are found.

In adorning their clothing and their persons the Senecas were almost entirely dependent upon the traders. In their Stone Age they had been restricted to the use of rude ornaments cut from the bones of birds and animals and the shells of the fresh-water mussels from the nearby creeks. Occasionally shell from the ocean, and catlinite or Huron slate, reached them in trade with the Indians farther south or west. The really beautiful glass beads of the traders appealed to them, and from the very beginning the Senecas imported them in great numbers and variety. The most commonly used were small spherical beads, red or blue in color. An elliptical black bead seems to have been in vogue a great deal, possibly because it resembled purple wampum. The polychrome beads of Venice, large as gooseberries, of a variety of colors, and showing a star in cross section, were rare at the time, though more abundant later. Long thin cylindrical beads, similar to those which many years ago received amongst us the name of bugle beads, were in common use.



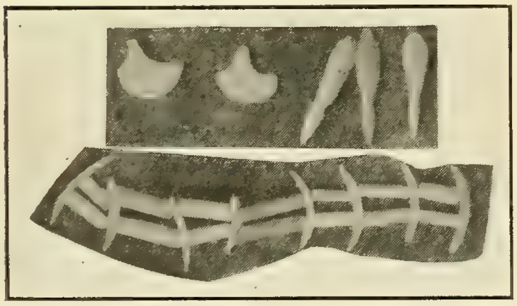
Pipes.—(A) European clay pipe, (B) Seneca stone pipe. The others are clay pipes of Indian manufacture.

Next to glass their commonest material for adornment was shell. This was brought in already made up into ornaments and also as raw material and made up in the villages. The Senecas seem to have prized it even more than glass, and worked it up into a large variety of ornaments.

More than any other ornament, they used the small cylindrical bead made of ocean clam shell, Venus mercenaria, which has come to be called wampum. At what time wampum was first used by the Senecas is unknown. It is probably a comparatively late introduction from coastal tribes. Stone Age Iroquoian villages of the Niagara Frontier seem not to have been acquainted with it at all. It was certainly rare in the Stone Age Seneca village at Richmond Mills. Whether it was known at all to the early Senecas of the Stone Age is doubtful, but if it were not introduced by European traders who bought it from the Algonkins along the Atlantic coast, at least it became abundant only after the traders had reached the Seneca towns.

The Senecas probably bought their wampum from the Indians living in the vicinity of Long Island, either by direct trade with them, or through the traders from New Amsterdam. They probably bought it ready made, though some of it they undoubtedly made in their villages from imported shell. This is shown by a few partly finished beads split in the making, which have been found in the refuse heaps. They used the wampum as ornaments, though at a comparatively early date belts of wampum were used in the ceremonies and as records. When LaSalle called the council of Senecas to ask for a guide to the Ohio, he was answered by "the head chief" who "presented a wampum belt to assure us we are welcome amongst our brothers. The second present was a second wampum belt to tell us they were firmly resolved to keep the peace with the French."

As part of the ceremonies at the ossuary at Gandagora, the Senecas laid on the ground either a wampum belt or several wampum strings, and upon these they made a heap of skulls. During the ceremonies as the bones were being thrown into the pit, loose wampum and short wampum strings were thrown in upon them.



Shell ornaments. In collection of Mr. Hamlin, East Bloomfield, N. Y.

Besides wampum, and clamshell to be made into wampum, the Senecas imported for ornaments the massive shell of the fulgur and busycon from the Atlantic coast and possibly the strombus from the Gulf coast. It is not known whether these were brought in unworked, or partly worked up, or made up into ornaments. Very few pieces of massive shell have been found on the sites, yet numerous ornaments made from it are found both in the graves and the refuse heaps.

In making these ornaments they used both the whorl and the columella. From the columella they made long cylindrical beads, of varying lengths and thicknesses. These they perforated lengthwise and if long they suspended them vertically from a necklace, but shorter ones they strung as beads. One short but very thick and heavy one was used as a pendant on the draw string of a man's bag which contained his pipes and extra gunflints, and which was buried with him.

They cut up the whorls into a large variety of pendants. Some of these pendants seemed to conform to a certain fashion then prevalent in the villages. Of these, several types are common to all the villages, and to villages of a later period. Amongst these are the so-called "claws", "turtles" and "crescents". The "claws" are shaped much like the claws of a bear or wild-cat. The "turtles" or "geese" are flattened irregular ovoids, with one end extended and dilated so that the whole form resembles that of a turtle or of a flying goose. Some of these are further ornamented with black dots. The crescents are spindle shaped or lenticular pieces cut from the curved portion of a shell, and are usually perforated with four holes.

These persistent types may be symbolical of some idea, as for instance the owner's totem, or they may represent only a long prevailing fashion. Then again they may be shapes imported along with the shell from the Algonkins, or they may be pendants bought ready made by the Senecas from the coast tribes.

A great variety of pendants was evidently made to suit the maker's own taste, and some of these are really beautiful. One little girl wore a string of glass beads on which were strung some ellipsoidal shell beads, two small circular gorgets, which were an inch and a half across, and a few beads cut into the shape of a star with four rays. From the necklace were suspended four long shell cylinders.

A few entire shells were sometimes used as ornaments. These were usually the shells of Olivella or Goniabasis, the outer whorls of which were perforated for suspension.

Large circular gorgets are exceedingly rare. One was buried with a body on the Dann farm. Local collectors have secured a few small ones. A few shell "pins" were found at Totiakto by Mr. Mattern, and Mr. Dann has a few of these from his farm. How these were used is not known.

From an aesthetic point of view, Seneca ornament reached its climax in the carved bone combs which have been found on all the later sites. In all these the craftmanship is excellent, and in most the design, whether elaborate or simple, is well chosen and well composed. So good is the design that it has been doubted whether these combs are of Indian make, yet all evidence seems to bear out the fact that they were made by Indians, and in some cases by the identical persons that wore them. There is no doubt that they were adapted from common European hair combs, which are frequently found associated with them. I know of no bone comb having been found on a Stone Age Seneca site. But that the combs were made by the Senecas in their own towns is certain. Mr. Hamlin took from a grave on the Marsh farm an unfinished comb, which had certainly been buried with its maker.

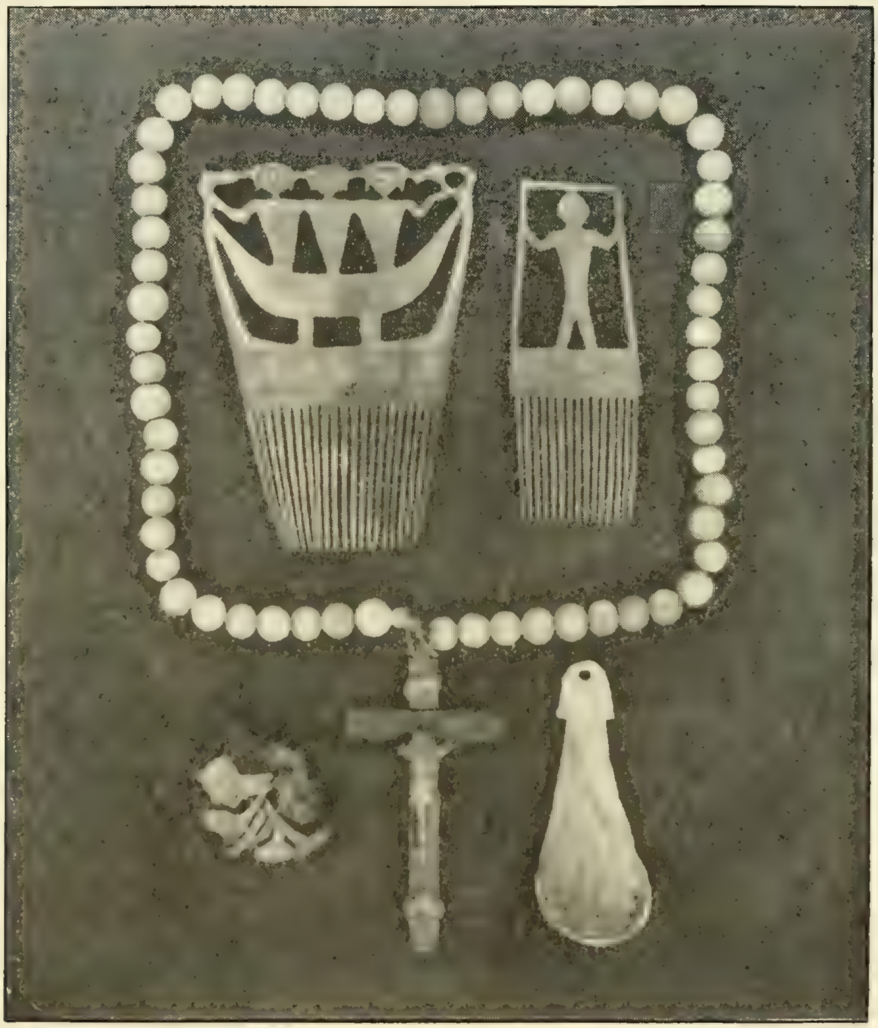
Although it is possible that the Senecas were led to apply design to these combs through seeing ornamental European combs, there can be no doubt that the designs themselves are thoroughly Indian. Though rude in detail their composition is well-planned but simple and their motifs are essentially aboriginal. The design is usually perforated through the thin bone plate utilized, and is almost always confined to animal and human derivatives. Some of the animals may be symbolic.

Aboriginal bone combs have been found on the Dann farm, from which come some remarkable specimens, now in the collection of Mr. Dann; from Victor (Gandogora); from the Beal farm; from the Bunce cemetery; from the Marsh and DeLong farms (Gandougarae); and from the Fox farm. Probably some come from the Factory Hollow and the Warren sites.

Very similar ones are found on the Niagara Frontier. Three fine ones came from Grand Island and another from Port Colborne. These are in the museum of the Buffalo Society of Natural Sciences.

The Senecas used stone very little for ornament. They occasionally secured small specimens of catlinite which they worked up into small pendants and beads. One catlinite pendant in the possession of Mr. Frank Hopkins of Victor is carved to represent a human face. Mica was rare, but a few pieces have been found in a grave.

They utilized both brass and iron as ornaments. They bought from the traders strings of tiny brass beads, and several of these strings were buried with the children. They used long spiral springs of thin brass wire for necklaces, and a flat spiral of heavy wire they made into a brooch. Small brass cones held plumes on the hair or clothing. Iron wire and brass wire they made up into bracelets.



Bone combs, crucifix and chaplet, brass rings and bone spoon.

The Jesuits gave their pupils brass rings as rewards for diligence or as incentives to more of it. These were seal rings, on the seal being symbols of the crucifix, the monogram of Christ, or the letter L, probably the monogram of Louis of France. They gave their proselytes crosses and medals, also, with the same symbols.

These seem in some cases to have been treasured up rather than worn. In a grave on the Beal farm were eight still tied together with a piece of rag just as their owner had hoarded them.

Considering the long time during which the Jesuits worked amongst the Senecas, few evidences of their activities are found. A silver dish, part of an altar service, tells of the mission of La Conception which was established there. A hunter of Gandagora, a prominent man evidently, was a Christian, for his hands still clasped a crucifix, the chaplet of which was made of ivory beads.

The Senecas used paint for their persons. Part of this was imported, part was home made. Black paint was made of lamp-black and was probably made in the towns by the person who used it. Yellow ochre gave them the yellow paint, red ochre a dark red. Whence these came is unknown. For a better shade of red they used vermilion which was brought in by white traders. They may have used for paint, graphite, a small piece of which was found in a grave at Bunce's, and a large piece at DeLong's.

The paint when in any quantity was ground and kept in jars. Mr. Dann has a jar of red paint which came from a grave on his farm. A little iron pot in a grave at Gandagora was filled with lamp-black. A part of the burial ceremonies was the sprinkling of paint into the grave as it was being filled.

Very little is known of the religion of the Senecas of that time. When the missionaries came their charges had a religion which the priests were inclined to consider a contrivance of the Evil One to circumvent and annoy them. Just what this religion was no one of the priests has told us, nor do they seem to have made any serious effort to find out. They complained that there was a belief in dreams, which they seemed to think amounted to a religion. The Senecas considered a dream a prophecy which he was constrained to fulfill, no matter what must be done nor the hardships undergone. The missionaries mentioned a man who dreamed that he was to go to Quebec to get a dog. He promptly departed for Quebec. Many other equally absurd dreams were noted with their consequences.

The priests noted also that the Senecas were under the domination of ''jugglers'', and that these ''jugglers'' used their power against the priests.

Belmont mentioned seeing in the ruins of Gandagora "a great mask with eyes and teeth of brass and a bearskin with which they juggle in their cabins''. This mask was also mentioned by Father Beschefer in his letter to Villermont. "I was mistaken when I told you that the Iroquois wore no masks. They make some very hideous ones with pieces of wood which they carve according to their fancy. When our people burned the villages of the Tsonnontouans, a young man made every effort to get one that an outaouae had found in a cabin, but the latter would not part with it. It was a foot and a half long and wide in proportion; 2 pieces of kettle, very neatly fitted to it and pierced with a small hole in the center represented the eyes." *

This mask is just such as is still used by the Senecas in ceremonials.

Greenhalgh noted that the Senecas after killing a captive made a great clatter upon the bark sides of their houses to drive away the dead man's spirit which might otherwise lurk about to do them an injury.

Correlating these few facts, somewhat of the religion of the Senecas of the time may be learned. It seems to have been somewhat similar to that of the pagan party of the Senecas today, in that immortality of the soul was believed in, and that spirits were somewhat under the control of certain persons (called the "jugglers" by the priests) who evidently corresponded to the members of the secret societies of the modern Seneca pagans. These religious secret societies were already in existence as is made evident by the mask, and by a small gourd rattle found in a grave at DeLong's similar to rattles still used by the Senecas.

Regarding the work of the Jesuit priests who labored a quarter of a century amongst the Senecas, John Gilmary Shea says: "But it is a remarkable fact that the Jesuit missionaries while they did not succeed in making the Five Nations Christian, overthrew the worship of Agreskoue or Tharonhiawagon, their old divinity, so completely that his name disappeared, and even those Iroquois who to this day refuse to accept Christianity nevertheless worship Niio or Hawen-niio, God or the Lord, who is no other than the God preached by the Jesuits in their almost hopeless struggle in the seventeenth century."

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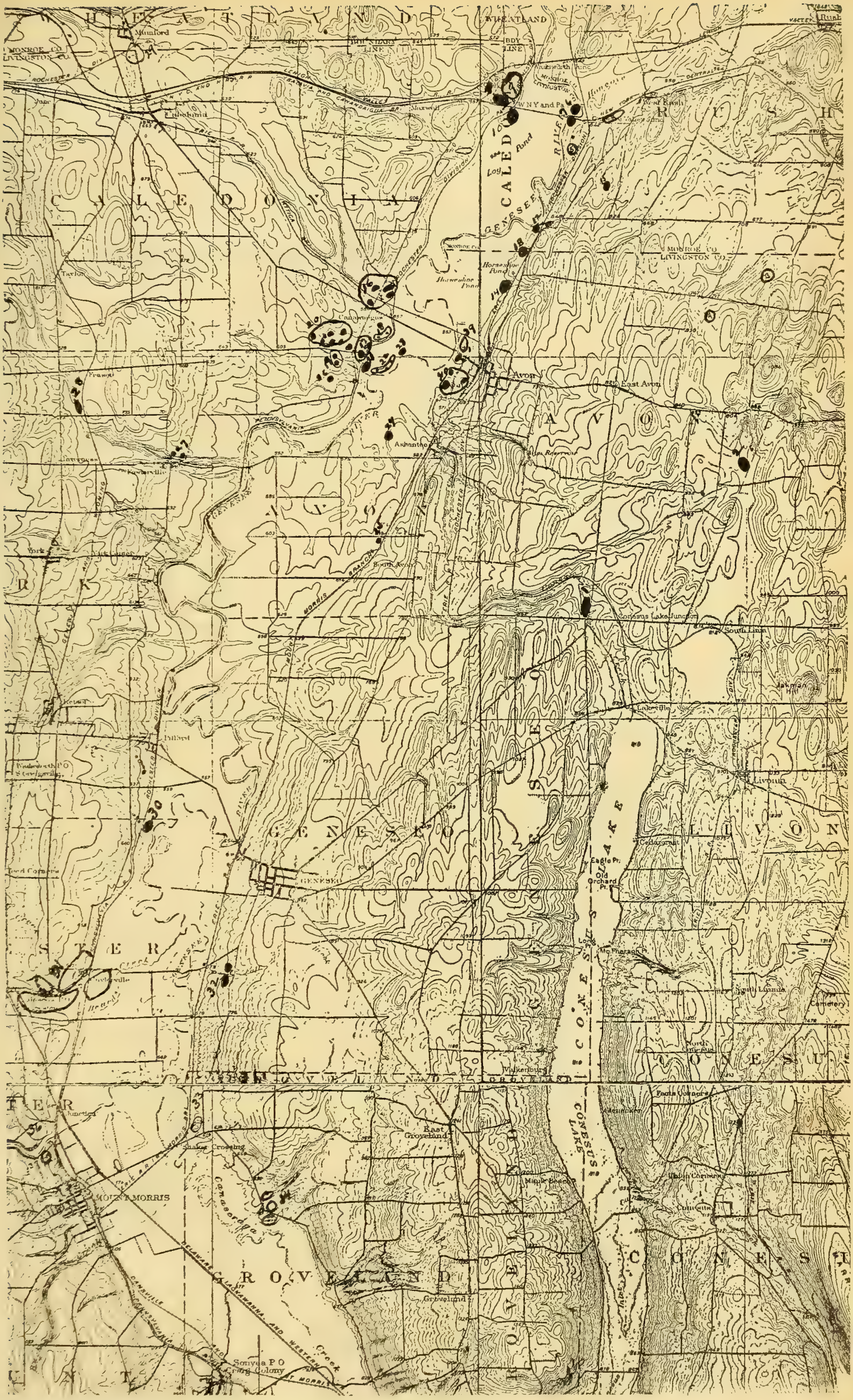
* Jes. Rel. LXIII, 289.


WHEATLAND
Mumford
MONROE CO.
LIVINGSTON CO.
Maxwell
W N Y and Pa
West Rush
RUSH
CALEDONIA
Horseshoe Pond
Canawaugus
Avon
East Avon
AVON
South Avon
Ashantee
Fowlerville
York
Conesus Lake Junction
South Lima
Lakeville
Livonia
LIVONIA
Cedarcroft
Eagle Pt.
Old Orchard Pt.
Long Pt.
McPherson Pt.
South Livonia
Cemetery
CONESUS LAKE
CONESUS
GENESEO
Geneseo
Piffard
Cuylerville
Groveland
GROVELAND
East Groveland
Shaker Crossing
Canaseraga Creek
MOUNT MORRIS
Sonyea P O
Craig Colony
Foots Corners
Maple Beach
Conesus
DELAWARE LACKAWANNA AND WESTERN
GENESEE RIVER

Village Sites of the Genesee Valley.

Village Sites of the Genesee Valley.

By H. C. Follett, Avon, N. Y.

The numbers correspond with those on the map.

1. Located at Millville on Wadsworth farm, tenant A. Miller. Several skeletons were removed about twenty years ago. Digging at the present time prohibited by the owner.

Sufficient iron implements removed from site to iron a large grist mill erected in the vicinity in an early age. Surface findings have been numerous, consisting of iron, flint, bone, copper, and large quantities of Jesuit beads.

One of the old residents of Avon, Dr. Nisfet, in examination of the skeletons removed from the site, stated positively that they were not Indian.

2. Located on Cleary farm one mile south of Lima road. Unable to find any record of burial plot being worked. It must be a large one as the evidence of several years' habitation is conclusive. The ash pits are from two to eighteen inches in depth. Surface findings consist of stone, copper, flint, iron and Jesuit beads. This is one of the villages named in the history of Livingston County as having been destroyed by the Marquis Denonville, in the year 1687.

3. Crouse farm near Gilbert's Mills. Burial lots have been excavated on a small scale. Site not large. Surface findings consist of stone, flint, and large quantities of white clay pipe stems.

4. Crouse farm. Small site, but little surface findings, and evidently a temporary village.

5. Stull farm near West Rush. Small site, several excavations have been made but little discovered. Cemetery not located.

6. Wadsworth farm. Cemetery No. 7, east bank of Genesee River.

8. East of Genesee Valley Junction near railroad. Surface findings are small. Many skeletons have been removed from this site. They were buried in pits.

9–10–11. Farrill farm on Wadsworth property at Honeoye Junction. Large site, cemetery on No. 9 in a gravel and sand bank. Destroyed by Pennsylvania Railroad Company in excavating for gravel. Pit in operation at the present time. Surface findings very numerous.

12. Markham farm between Avon and West Rush. Small burial site. Some skeletons removed when the Erie Railroad made a cut through the knoll. No attemps have been made to excavate to my knowledge.

13. Small site in connection with No, 12.

14. Wiard farm, south of Nos. 12 and 13. Small site. Excavations were made several years ago.

15. Burgett farm, between Avon and West Rush. Small village site. A skeleton recently removed from the sand knoll in the vicinity was found in a sitting position.

16. Post & Post farm at Canawagus, comprising four circuits. House now stands on what was supposed to have been the cemetery, as skeletons were removed when its cellar was excavated. Surface findings in quantities, principally flint and stone.

The number of skeletons removed from the cemetery at Canawagus, west of Avon, is very few compared with other places of its size.

17. House farm. Surface findings numerous.

18. Cemetery. This cemetery has been destroyed by excavation for gravel.

19–20. House farm.

21–23. Small sites, supposed to be temporary. Findings on property of stone and flint.

24. Small. Surface finds are rare.

25. Pierpont farm near South Avon. Small site. Flint and stone on surface.

26. House farm. Small site. Flint and stone on surface.

27. Casey farm, Fowlerville. Small site. Findings of flint and stone.

28. Witcher farm, west of Fowlerville. Flint implements in large quantities. Evidence of fair sized village. No cemetery has been located to my knowledge.

29. Spring Creek, west of Caledonia. A famous historic spring. Some skeletons have been removed in excavating for buildings in that vicinity.

30. Wadsworth farm, west side of river, opposite Genesee Road. This is noted in history. The burial place is protected by the owners.

There is a village site near Piffard on the west side of the Genesee River at the cemetery, that has never been excavated. I am unable to give the exact location, but it is approximately one mile north of No. 30.

31. Comprises territory of Little Beard's town. Many skeletons were removed in excavating gravel for the Pennsylvania Railroad.

32. Wadsworth farm at Fall Brook. Burials protected by the owners.

33. Fitzhugh farm, south of Fall Brook. Protected by the owners.

34. At the Hermitage, Wadsworth farm. Large site. Surface findings are numerous and are composed of flint, stone, and small quantities of copper. Recorded in history as the village destroyed by Gen. Sullivan in his campaign through the Genesee valley, No 33 being destroyed at the same time.

35. Located at Craig Colony. Findings numerous. It is protected by the Superintendent of the colony.

36. Squakie Hill, south of Mt. Morris. Findings consist of flint, copper and stone. Some excavations have been made in this vicinity.

37. Wadsworth farm, south side of Genesee River, opposite Squakie Hill.

38. Gardeau Flats, home of Mary Jamison. No surface findings on account of flood land.

I might say in connection with various sites, that from Rochester to Caneadea on both sides of the Genesee River, there are but few fields that do not bear evidence of having been inhabited by Indians.

Report on an Ossuary (Number one)

AT ORANGEPORT, NIAGARA COUNTY, N. Y.

BY WILLIAM L. BRYANT.

In the spring of 1909, a farmer named Sweeney, while engaged in removing dead peach trees from a worn out orchard on his farm at Orangeport, Niagara County, discovered a mass of human bones, apparently buried in disorder, a few feet below the surface.

I visited this place on May 19, 1909, a day or two after its discovery by Mr. Sweeney, who kindly allowed me to investigate and assisted in the labor of excavating.

The site of this ossuary is a sandy field on the crest of the "Mountain Ridge", one of the highest points of the county. Mr. Sweeney had already dug a hole some four feet square, from which were taken a great many skulls. Some of these he had reinterred; others had been taken away by curious neighbors.

We began at his excavation and carried it to the limits of the original pit which seemed to have been oblong, being about twelve feet long and eight feet wide. Bones were encountered at a distance of eighteen inches beneath the surface and were packed solidly three and one-half to four feet in depth.

From this pit we took seventy-eight skulls, not counting those which Mr. Sweeney had removed. The bones of all skeletons were in all cases disarticulated and had apparently been tightly packed in at the time of burial. Both children and adults were represented. There seemed to be centers at which skulls were more closely packed than at any other points in the pit, and it is probable that the skeleton bundles were arranged in some more or less radiating manner. A photograph which I took shows one of these centers, but I regret that a rainy day prevented me from obtaining good pictures which could be reproduced.

No artifacts of any sort were found. Many of the skulls (I found nine such) were badly distorted, evidently by earth pressure and the long continued solvent effect of some acid of the soil; the sutures, however, had not separated. Altogether the burial seemed to me one of considerable antiquity.

In the absence of cultural clues to the identity of the people who performed this burial, we should compare it with the ossuaries of the adjacent regions. Some years ago I opened one similar in all respects to the present ossuary, at Sherkston, Ontario, a few hundred yards from the north shore of Lake Erie. The pit was of about the same size and apparent antiquity and contained a confused mass of tightly packed bones of individuals of all ages. No separate graves were found on the outskirts and no human artifacts of any kind.

On the other hand, the cemeteries at Point Abino, Ont., at Port Colborne, Ont., and one near Cayuga, Ont., all of which I have personally investigated, agree in the following particulars: all contained bone pits as nuclei, all had separate graves in the vicinity and all contained burial presents, largely of European manufacture. The cemeteries at Stamford, Ont., and at Grand Island, N. Y., contained one or more small pits with a few bundle burials packed in them, surruonded by a large number of separate graves. I infer from these circumstances, that soon after the Jesuits visited these people, they persuaded them to give up the "Feast of the Dead", which was gradually abandoned, and baptized converts were given individual burials.

The tribes inhabiting this region when first visited by the whites were of Huron-Iroquois stock, either Neuters or one of their offshoots, the Wenros.

There are traces of an earlier Algonquin people along the Canadian shore of Lake Erie and of the Niagara River, but a cemetery recently found at Fort Erie, Ont., seems to show that the burials were in separate shallow graves, accompanied by bone and flint weapons and with implements of a northern Algonquin culture.

There remain the Missisaugas, an Algonquin nomadic tribe, who made their first appearance in this vicinity in historical times about 1686, but who occupied no part of it permanently until 1700 when they were invited by the Senecas to reside near them. Owing to a traditional hatred between them and the eastern Iroquois, however, they made no very permanent settlements in this region. An Onondaga Indian told me that many years ago (1870) he attended a council on the Grand River at which were representatives of all the Six Nations as well as of the Chippewas and Missisaugas of New Credit and that he frequently heard these Missisaugas in conversations with each other refer to the Mohawks as "snakes", with bitter emphasis. I think that they or any Algonquin people may be safely eliminated and that this ossuary was dug by Neuters or Wenros at some time before white influence had reached them.

Report on an Ossuary (Number two)

AT ORANGEPORT, NIAGARA COUNTY, N. Y.

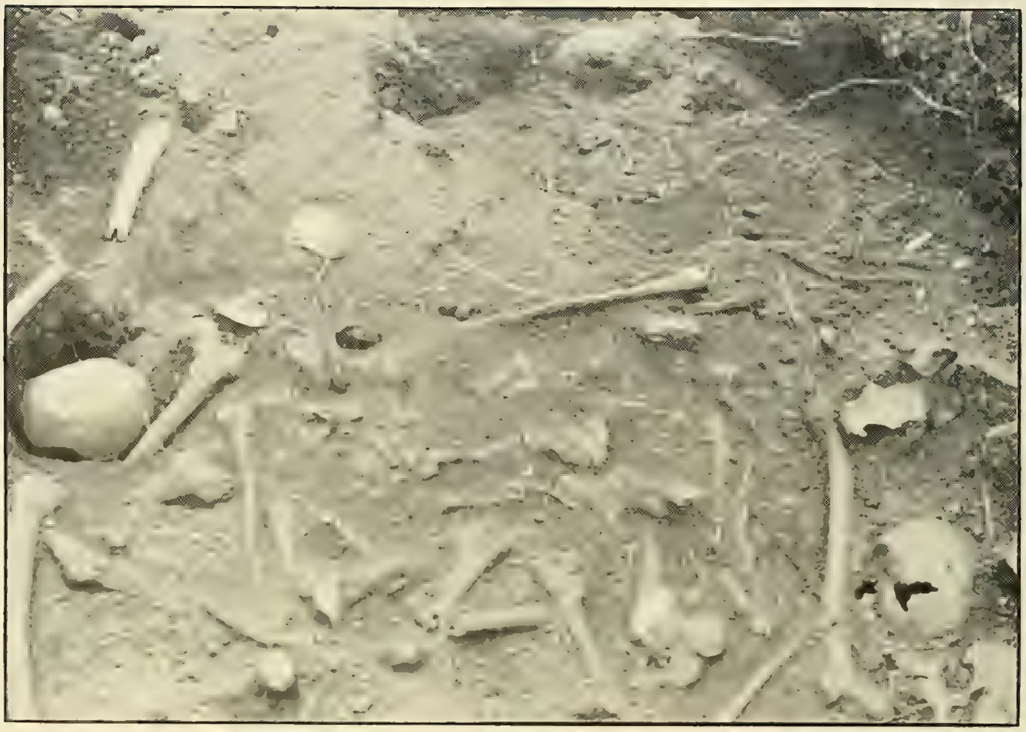
BY FREDERICK HOUGHTON, M. S.

In 1909 an ossuary was discovered by accident on the farm of Sweeney Brothers at Orangeport. This was visited by Mr. Bryant who has reported upon it.

On July 14th, 1910 I visited the site of this ossuary to satisfy myself that no individual graves had been overlooked. In testing nearby I discovered a mass of bones which upon investigation I found to be a great bone pit similar to that which had already been found.

The ossuary. Photograph by F. Houghton.

The site of these ossuaries is on the top of a sandy knoll which here is superimposed upon the limestone which caps the escarpment known as the "Mountain Ridge". The hill is one of the highest points in Niagara County, being 640 feet above the sea, and it commands an extensive view of the lower lying fruit-tree-covered Ontario plain and, beyond, the blue waters of Lake Ontario. Eastward the escarpment is broken by a gully in which is a considerable creek, the east branch of Eighteen Mile Creek. A rather strong spring bubles out of the limestone at the base of the hill.

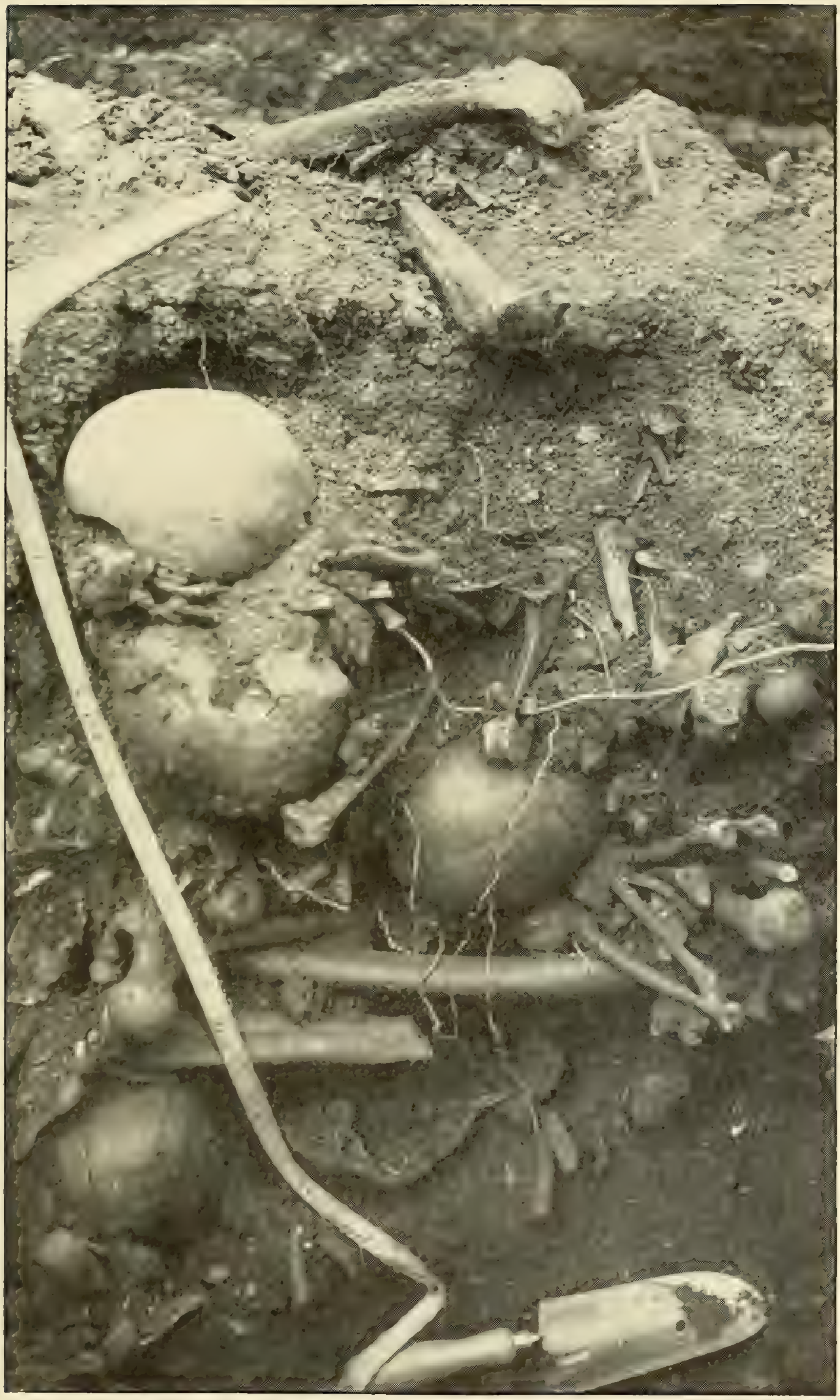


Upper surface of the ossuary. Photograph by F. Houghton.

Fifty years ago or more a house stood on the crest of the hill which at that time was covered by an apple orchard. This house and the orchard have disappeared.

There is no story regarding any burial place here, nor is there any among the neighboring people, many of whom can remember the site for half a century or more, and the finding of the first ossuary was a surprise to everyone.

No Indian village site has been found nearby. The nearest is probably that at Shelby, near Medina. On the edge of the gully before mentioned, however, I found a few small black spots which undoubtedly mark the sites of Indian cabins or tents, and in these I found a few potsherds and flint flakes. A



Cross-section of the ossuary. A bundle of bones projects at the right edge. Photograph by F. Houghton.

grave is also said to have been found there. Flint points are found on the low lands at the base of the hill near Gasport, half a mile away.

The surface of the hill yields practically no Indian artifacts. I found one pitted stone hammer and a few flakes which evidently marked the spot where some Indian had made a point at some distance from the ossuaries.

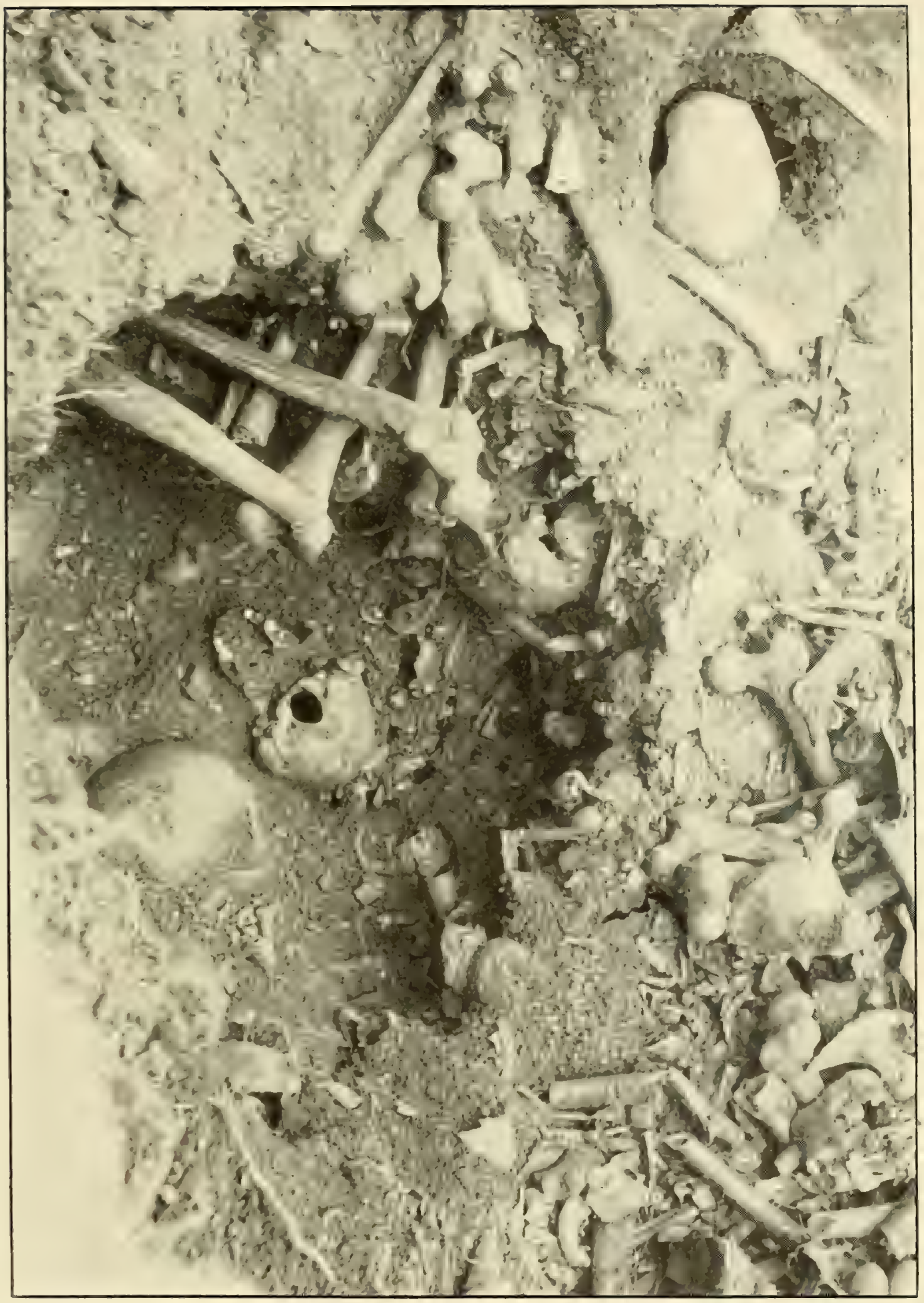
The second ossuary is twelve feet south of the (probable) southern edge of the first ossuary. It proved to be an irregular rectangle, the bounding lines of which seemed to be parallel to those of the first pit.

In exploring it I stripped the earth from an area over the ossuary of nine feet by ten feet and thus uncovered a large superficial area of bones, and then followed the eastern, northern and southern edges of the pit. The uncovering was not continued to complete the western edge because of lack of time and this has not since been uncovered, though the testing rod showed that the bones extend westward for about four feet from the edge of our excavation.

The entire pit was filled with one great mass of human bones. In the portion uncovered we counted 135 skulls. The bones were in no order but were intermingled in the greatest confusion. In a few instances the bones of a limb were found together as though the limb had been intact when it was thrown into the pit, or at least that the bones were still held together by the tendons. In at least two instances the bones of a skeleton were so arranged as to suggest the "bundle burial" type of interment which occurred so often in the Grand Island cemetery, the long bones being laid together and parallel, with the skull at one end and the pelvis at the other.

Only one entire skeleton was found. This lay in a flexed posture, head to the west and face south, on the original soil of the bottom of the pit and at its extreme edge. It was covered with the bones of the other skeletons of the pit, which lay in immediate contact with it. The only articles found in the pit, namely two small shell beads, lay on the pelvis of this skeleton.

The bones in the pit were those of persons of all ages from infancy to extreme old age. There were numerous evidences of disease and wounds. Several tibias and clavicles were enlarged and spongy. One skull was marked at the base by a deep cut



Looking downward into the ossuary. Photograph by F. Houghton.

and one showed a healed wound. Perforated humeri were numerous.

There was nothing to show the identity of the persons buried in the pit, the only articles found being the two shell beads mentioned. The territory was at one time occupied by the Neuter Nation and the Wenroes, people of Iroquoian family, and by the Missisaugas, of Algonquin stock. Both these people had the custom of burying their dead in communal pits, with ceremonials. Other pits on the Niagara Frontier, probably Neuter, contained many articles, which had been thrown into the pit with the bodies. The absence of articles here would seem to indicate an origin other than Neuter. The village at Shelby may have been a Wenro village, but it has its own cemeteries which seem to have been large enough to account for its dead. It is entirely probable that the Missisaugas who wandered over the country thereabouts considered the high hill a suitable place to bury their dead and there held a "Feast of the Dead".

Hemipterological Gleanings.

BY EDWARD P. VAN DUZEE.

The following descriptions and synonymical notes have accumulated in the course of my studies on our North American Hemiptera during the past year or so:

CAPSIDAE.

Phytocoris rufus n. sp.

Closely allied to *mundus* but smaller, more reddish in color and wanting the vestiture of whitish hairs so conspicuous in that species. Length 4 to 4½ mm.

General characters substantially as in *mundus*. Surface almost nude, with a few short scattering hairs only, not distinctly long-pubescent as in the allied form. Notch on the sinistral aspect of the male genital segment rounded, not right angled as in *mundus*, the margin behind this feebly subangularly produced.

Color dull rufous becoming dark sanguineous on the head, basal joint of the antennæ and legs; pronotum, outer margin of the elytra and most of the lower surface paler; basal joint of the antennæ and the femora obscurely irrorate with paler, the latter pale at base. Second joint of the antennæ paler with a dusky band before the middle and another at apex. Third and fourth joints blackish, the narrow base of the third pale. Tip of the rostrum black. Hind submargin of the pronotum with a dusky vitta, the extreme edge paler, thus giving the impression that there is a linear depression along this margin. Corium shaded with obscure sanguineous forming an oblique vitta on the disk posteriorly and another parallel along the claval suture. Cuneus entirely sanguineous or sometimes a little paler exteriorly, marked with two dusky points on the inner margin. Membrane deeply infuscated with a pale spot at the apex of the cuneus, the nervures fusco-sanguineous. Tarsi black, the posterior pale at base.

Described from ten examples representing both sexes, taken at Sevenoaks, Florida, on May 1st, 1908, and listed as *Phytocoris sp.* in my report on Florida Hemiptera. (P. 180, No. 139.)

This species is very close to *mundus* but its smaller size, deeper color, the pale posterior margin to the pronotum bordered by dusky, the obscurely banded second antennal joint, colored cuneus, darker membrane, and especially the want of the conspicuous pale pubescence on the upper surface will distinguish it.

Phytocoris vau n. sp.

Aspect of *tibialis* but larger and more elongated: pale greenish-yellow; antennæ, legs, clavus and membrane rufous or rufopiceous. Length 6 mm.

Head small, nearly vertical before. Antennæ slender; basal joint stout, as long as the pronotum, armed with short stiff black hairs; second joint very long, two and one-half times the length of the first; third and fourth together not longer than the second. Pronotum polished, much narrowed anteriorly, the sides feebly arcuated. Elytra long, parallel, minutely sericeus, the corium polished.

Color pale greenish-yellow. Clypeus, cheeks and loræ rufous. Basal joint of the antennæ dark rufous, immaculate; second paler, becoming piceous at apex, marked with a pale ring at base and a broader one beyond the middle; apical joints fuscous, the third narrowly pale at base. Rostrum rufous at base, black beyond the middle. Pronotum and scutellum entirely pale. Clavus rufo-piceous, the pale pubescence conspicuous on this dark surface. Corium pale with a rufous vitta at the inner angle connecting the dark color on the clavus with that on the membrane. Cuneus rufous at apex. Membrane fuscous tinged with rufous and minutely irrorate and clouded with whitish on its disk. Beneath pale. Legs almost sanguineous; the tibiæ paler becoming infuscated at apex; tarsi blackish.

Described from one male example taken at Pasadena, California, June 17th, 1909, by Mr. Fordyce Grinnell Jr. This slender species is very distinct by its pale greenish color with rufous antennæ, legs. clavus and inner angle to the corium.

Argyrocoris n. gen.

Closely allied to *Phytocoris*. Head nearly horizontal; the vertex oblong, continued in the plane of the pronotum; moderately convex. without a median sulcus. Eyes oval, nearly vertical, contiguous to the angles of the pronotum; clypeus strongly produced, narrow, compressed. First joint of the antennæ short, scarcely thickened, little longer than the inner margin of the eye; second linear, longer than the head and pronotum together; third more slender and shorter; fourth still more slender and shorter than the first. Pronotum transverse, base and apex truncate, the latter reaching nearly to the outer angles of the eyes; collum entirely wanting; sides nearly straight, scarcely carinate. Scutellum small. Elytra and wings as in *Phytocoris*. Rostrum passing the posterior coxæ. Anterior coxæ elongated. Posterior femora strap-like as in *Phytocoris*. Basal joint of the tarsi not longer than the second. Arolia linear, long and free as in this sub-family.

This genus has the form and aspect of *Phytocoris*, but the entire absence of a pronotal collum, the short basal joint of the antennæ and the strongly compressed and arched clypeus seem to warrant its separation. It has much the aspect of the *Mirinæ* but the non-sulcate vertex, elongated anterior coxæ and short basal joint of the tarsi exclude it from that division.

Argyrocoris scurrilis n. sp.

Testaceous white; pronotum with five lines of appressed silvery scales the three median of which are continued over the head. Length 5 mm.

Vertex viewed from above oblong, a little longer than broad between the eyes; clypeus abrupt, narrow, viewed from the side forming a semicircular plate distinctly wider than the narrow cheeks and loræ. Eyes castaneous. Basal joint of the antennæ surpassing the clypeus by about one-third of its length, attenuated on its immediate base, a little thicker than the second; third about two-thirds the length of the second; fourth short and feeble, not half the length of the third and much thinner, hardly so long as the first. Callousities of the pronotum obsolete. Elytra long, parallel, surpassing the tip of the abdomen by practically the whole length of the membrane. Hind femora much compressed, ligulate, regularly narrowing from near the base.

Color whitish testaceous, clothed with scattering soft white hairs. Pronotum with five slender longitudinal lines of brilliant silvery-white appressed scale-like hairs, the three median of which are continued on the head and are connected behind by a similar line across the base of the scutellum; the pronotal lines more or less distinctly margined with fuscous. Scutellum somewhat infuscated at base, the broad median line and slender margins silvery pubescent. Elytra nearly uniclorous. Membrane white, sparingly marmorate with fuscous beyond the areoles. Legs concolorous, the hind femora with three longitudinal black lines below, which are more or less visible above. Tarsi slightly infuscated, the claws black.

Described from three examples taken at light in the Huachuca Mts., Arizona, in July, by Prof. H. G. Barber.

Eustictus venatorius n. sp.

Closely allied to *grossus* but of a yellowish-testaceous color mottled and dotted with fuscous or black. Length 7—8 mm.

Head as in *grossus;* exerted base polished black with a fulvous spot behind the inner angle of each eye; surface pale clouded with fuscous between the antennæ and more indistinctly on the vertex; cheeks polished black; throat blackish. Antennæ pale closely dotted with black; tip of the second joint and apical one-half of the third whitish; fourth joint black, the extreme tip paler. Pronotum coarsely punctured, variegated, anteriorly mostly black, posteriorly largely pale. Scutellum black; a large fulvous spot either side of the middle of the convex anterior lobe, and a small one on either side of the base of the tumidly bilobate posterior lobe. Elytra pale blotched with black especially on the clavus and apical disk of the corium; costa pale ending in an elongated black spot. Cuneus pale yellow, black on the inner angle and fuscous at apex. Membrane smoky, its nervures black. Beneath mostly pale, clouded with fuscous along the sides. Femora dotted with fuscous, the tibiæ four times alternated with black. Tarsi and rostrum dusky, the latter attaining the hind edge of the metasternum.

Described from one male and two female specimens taken by me at Hamburg and Gowanda, N. Y., and Crescent City, Fla. Those taken in New York were beaten from hickory trees over which they were prowling, apparently in search of prey.

Genus Largidea Uhler, MS.

Allied to *Hadronema*. Head short, nearly vertical, scarcely produced below the line of the gula; cheeks narrow, but little prominent; loræ minute, obscure; vertex ecarinate. Antennæ robust; first joint scarcely attaining the apex of the head; second about as long as the pronotum, much thickened regularly toward its apex; third and fourth short, subequal, and about as long as the first, fusiform, much thinner than the others. Pronotum coarsely punctured, trapeziform, about as long as wide across its base, sides straight, strongly carinate, base broadly rounded over the base of the scutellum; apex about one-half as broad as the base, flat, collar wanting; callousities obscure, bounded behind by an impressed hooked line. Scutellum small, rugose. Elytra finely punctured; the costal margin moderately expanded and curved. Membrane bi-areolate. Wings without a hamus. Legs rather short; tibiæ armed with closeset hairs but without stiff bristles; first joint of the tarsi nearly as long as the apical two united; second short and scarcely distinguished from the third. Arolia wanting. Rostrum just passing the intermediate coxæ. Surface short-pubescent.

This genus seems to be very near to Distant's genus *Fuscus* (Biol. Heter. I, p. 299), but he does not mention the carinate margin of the pronotum which he would almost certainly have done had it been present in his genus. Dr. Reuter mentions this genus under his subfamily Heterotominæ on page 110 of his Neue Beiträge zur Phylogenie und Systematik der Miriden, 1910; probably from specimens I had sent to him so determined for me by Dr. Uhler.

Type: *Largidea marginata* n. sp.

Largidea marginata Uhler, MS.

Dark castaneous. Head piceous-black with a rufous spot against the inner margin of the eyes. Second joint of the antennæ sometimes tinged with castaneous. Pronotum rufous; callousities black, the impressed line behind them polished; generally the whole disk behind the callousities is dark castaneous leaving a broad rufous or red margin. Scutellum rufous with a blackish spot on its base. Elytra dark castaneous; the cuneus and sometimes the broad inner margin of the corium rufous. Membrane blackish fuscous; the nervures black. Beneath mostly rufous becoming black on the sternum. Legs nearly black, the femora sometimes rufous beneath.

Described from thirteen examples taken by me on scrub oak at Salida, Colorado, July 24th, 1900. At that time I sent specimens to Dr. Uhler which he determined as *Largidea marginata* Uhler, but the description seems never to have been published.

Genus Ganocapsus n. gen.

Body glabrous, oblong, subelongate; head nearly vertical, more elongated than in *Garganus*, clypeus strongly convex, passing the cheeks by one-half its length, vertex distinctly impressed between the inner angles of the eyes. Antennæ long and slender, attenuated toward the apex; first joint thickest, nearly as long as the pronotum; second joint filiform, not at all thickened. Pronotum longer than in *Garganus*, strongly narrowed anteriorly, and the sides distinctly but not deeply sinuated; surface transversely wrinkled, impunctate, collum distinct. Elytra polished, impunctate, strongly shagreened. Rostrum attaining the hind edge of the metasternum. Posterior femora long, terete, scarcely flattened and but little narrowed to the apex; first tarsal joint not longer than the second; arolia large and divaricate as in the allied genera.

This genus is closely allied to *Garganus* but differs in having the second antennal joint filiform, the head more produced with a longer and more convex clypeus, the vertex more distinctly impressed at base, and the pronotum longer with the sides obviously sinuated.

Type *Ganocapsus filiformis* n. sp.

Ganocapsus filiformis n. sp.

Form of *Garganus fusiformis*. Color pale sanguineous, elytra black, commissural and costal margins and legs pale yellowish. Length, male 5, female 6 mm.

Head nearly vertical, longer than in *Garganus fusiformis;* front convex, polished; clypeus prominent, considerably produced before the loræ. Antennæ slender; first joint cylindrical, as long as the pronotum behind the callousities; second about twice the length of the first, not thickened in either sex; third two-thirds the length of the second and more slender; fourth one-half the length of the third and still thinner. Sides of the pronotum sinuated behind the middle, the callousities distinct. Scutellum proportionately a little longer and more convex than in *fusiformis.* Elytra very minutely and sparingly tomentose.

Color pale sanguineous becoming a little greenish on the abdomen; eyes, basal joint of the antennæ, elytra, tip of the rostrum and oviduct of the female black; apical half of the second antennal joint, third except on its immediate base and the fourth entirely, apex of the tibiæ and the apical joint of the tarsi fuscous; sides of the venter with an obscure fuscous vitta. In the female there is an oblique obscure fuscous cloud next the humeral angles. Legs whitish-testaceous. Commissural and costal margins of the elytra whitish, the later covering most of the cuneus; membrane fuscous-black, the nervures black.

Described from one pair taken at Tuscon, Arizona, August 28th, 1911, by Mr. F. Payne. This species has somewhat the aspect of a *Stenotus* but the short basal joint of the tarsi excludes it from that genus. In Reuter's 1909 key to the genera of the Capsaria it goes directly to genus *Garganus* from which it differs, however, by the characters given above.

Dichrooscytus irroratus n. sp.

Size and aspect of *suspectus* Reut. Head more vertical than in *suspectus,* the basal carina of the vertex but feeble, the surface behind it depressed and continued in a broad indefinite sulcus in the male; surface anteriorly distinctly convex and arcuately striate; clypeus and cheeks prominent and deeply sutured. Antennæ about as in *suspectus,* first joint thicker, slightly longer than the basal width of the vertex, second in both sexes longer than the basal width of the pronotum. Pronotum more narrowed anteriorly and with the sides more oblique than in the allied form. Upper surface sparingly clothed with short pale hairs.

Color yellowish green, sometimes becoming deeper green on the anterior disk of the pronotum and on the abdomen. Scutellum pale sanguineous omitting the basal margin and an oval spot either side at apex; elytra more or less closely irrorate with sanguineous excepting the costal margin, the narrow calloused base and about the apical one-half of the cuneus; extreme tip of the latter sanguineous-brown. Membrane slightly enfumed becoming a deeper brown toward the apex, on the tip of the larger cell and next the apex of the cuneus; the nervures sanguineous or mostly so. Legs pallid becoming a little suffused toward the apex of the tibiæ; the tip of the tarsi and apex of the rostrum blackish. Length to tip of membrane 5 mm.

Described from two males and two females taken by me at Rifle, Colo., July 25th, 1900. About a week earlier I took four examples from the cedars about Manitou, Colo , which differ from the typical form above described in being smaller (4 mm.), in having the base only of the scutellum sanguineous, the nervures of the lager areole of the membrane pale, the base of the cuneus more deeply sanguineous and the antennae a little infuscated at apex. In some individuals the pronotum is washed with reddish. They have the same swollen striate face and probably are not distinct.

Dichrooscytus maculatus n. sp.

Allied to *elegans* but smaller and more strongly marked. Vertex but feebly carinated at base; clypeus and cheeks smaller and less convex than in *elegans,* the eyes when viewed from the side larger and more oblong, reaching almost to the line of the gula. Antennæ longer, the second joint much elongated, one and one-half times the length of the third and fourth united; scutellum narrower and more convex; upper surface with a few pale appressed hairs more conspicuous on the elytra.

Color light greenish yellow more or less tinged with pink, leaving the head, antennæ and rostrum paler; punctures on the pronotum strong, concolorous; eyes black. Elytra marked with an oval fuscous spot at the inner angle of the clavus and a narrow transverse fuscous vitta on the apex of the corium, a little widened toward the costa. Membrane slightly enfumed, with a fuscous cloud across the apex and over the apical one-half of the areoles, the nervures pale, those at the extreme basal angle blackish. In the reddish examples the abdomen and legs are more or less strongly suffused with the same color. Length 3 mm.

Described from two female and four male examples taken by me at Sevenoaks, near Clearwater, Florida, on May 1st, 1908. This pretty little species is near to *elegans* but it has a different aspect on account of its larger eyes and narrower form, and is well distinguished by the more convex scutellum, longer antennæ, shorter clypeus and cheeks and the maculated elytra.

Horcias dislocatus Say.

So far as I can make out all of our eastern forms of *Horcias* belong to one species for which I adopt the name first used by Say. The following fairly well distinguished varieties are represented in my collection:

Var. dislocatus Say. Pale rufo-sanguineous; first two antennal joints, eyes, narrow base of the vertex and apex of the head; two approximate spots on the base of the pronotum, the scutellum except the median line; clavus, at least within; a wedge-shaped spot on the apex of the corium; membrane, sides of the pectus and abdomen and tips of the tibiæ and tarsi, black.

Var. scutellatus n. var. Like *dislocatus* except that the pronotum and elytra are nearly or quite immaculate and the scutellum is entirely black. Portland, Me., and Brantford, Ct.

Var. goniphorus Say. Differs from *dislocatus* in having the thoracic spots merged, the scutellum entirely black, the elytra broadly black within and the femora and sometimes the base of the tibiæ more or less, black.

Var. affinis Reut. Differs from *dislocatus* in being more fulvo-testaceous in color, in having the pronotal spots larger and the elytra black with two lines along the claval suture, the narrow costa, a line near it and the cuneus except at apex, pale.

Var. marginalis Reut. Black; two divergent vittæ on the vertex against the eyes, narrow costal edge of the elytra and sometimes a line on the base of the cubital nervure and one on the inner angle of the cuneus, the tibiæ except at base and apex and the base of the tarsi, white or whitish.

Var. nigrita Reut. Differs from *marginalis* in having the elytra entirely black except for a pale line on the base of the cubital nervure.

Var. pallipes n. var. Differs from *nigrita* only in having the legs entirely pale or fulvo-testaceous. Hamburg, N. Y. Five examples.

Var. thoracius n. var. Differs from *nigrita* in having the pronotum rufo-sanguineous with the collum and a vague cloud along the hind border black. Hessville, Ind., collected by A. B. Wolcott.

Lygus tenellus Uhler MS.

Allied to *invitus* and *belfragei* but more uniformly colored. Length 5 mm.

Body more narrowed anteriorly than in *invitus;* covered with a closely appressed pale pubescence. Antennæ longer and more slender than in the allied species and the pronotum longer with a narrower apex and more rounded anterior angles.

Color ferrugino-testaceous becoming whitish on the legs, rostrum and along the middle of the ventral aspect of the whole body. Eyes, tips of the tarsi and rostrum black; apical joints of the antennæ usually slightly infuscated. Elytra frequently, and sometimes the scutellum, more or less infuscated, at times almost black in the males. In the dark specimens the cuneus is mostly pale. Membrane a little infuscated; usually the apex or a marginal spot about half way beyond the apex of the cuneus is darker. In typical examples there is a fuscous cloud along each side of the body beneath which reaches the margin on the abdomen and shades lighter towards the middle of venter. Stigmata pale. In dark males the abdomen may be entirely blackish-fuscous becoming a little paler along the middle of the venter.

Described from numerous examples of both sexes taken in New York, Massachusetts and Maine. It is a common species throughout the eastern United States and Canada. Many years ago Dr. Uhler determined this species for me as *Lygus tenellus* and Prof. Osborn and Mr. Heidemann have it under the name *Lygus hirticulus* Uhler, MS., but a description of it has never been published under either of these names.

This belongs to a perplexing group of species including *invitus* Say, *belfragei* Reut. and *fasciatus* Reuter. The females are sometimes difficult to distinguish, but their males can readily be separated by the form of the genital pieces. In *invitus* the ventral base of the genital segment is long, sinuated on the side and strongly produced to a subacute point at the middle; in *tenellus* it is shorter and rounded at apex and deeply notched at the side; in *belfragei* it is still shorter and more rounded with the lateral notch more rounded while in *fasciatus* this segment is almost truncated with a broadly rounded median lobe. In *tenellus* the style lying in the sinistral notch of this segment is produced in two parallel subacute equal teeth separated by a narrow deep notch similar in form to one of the teeth; in *invitus* it is produced in one moderately long obtusely conical tooth, from the inner base of which projects an acute incurved tooth forming nearly a right angle with the primary tooth; in *belfragei* this primary or outer tooth is longer and more slender, linear, obtuse at apex and forms an angle of about 135 degrees with the acute incurved inner tooth; in *fasciatus* this primary tooth is still longer and curved somewhat outward so it is parallel with the outer margin of the segment, and the long incurved inner tooth is extended in almost a straight line from the primary tooth, forming an angle of at least 165 degrees.

The antennæ usually present recognizable characters between these species but in immature specimens they are not to be trusted. In typical *invitus* they are fuscous with the extreme base and apex of the first joint pale; in the pale variety of *invitus* joints three and four and the broad apex of two only are fuscous; in *belfragei* the apex of the second joint is black and the base at least and sometimes nearly the whole of this third joint is pale; in *fasciatus* and *tenellus* the antennæ are pale with the apical two joints more or less infuscated; more in *fasciatus* than in *tenellus*. In the markings of the pronotum and elytra these four species seem to run together; *invitus* when mature nearly always has a broad blackish ray on either side of the pronotum which is sometimes seen in *belfragei* but never in *fasciatus* or *tenellus* so far as my observations go; *belfragei* and *fasciatus* are usually more or less greenish while *invitus* aud *tenellus* are, I think, never so when mature. In *belfragei* and *fasciatus* and in the paler forms of *invitus* there is a fuscous fascia across the broadest part of the corium which may extend over the clavus to a greater or less extent. In *tenellus* the elytra are practically unicolorous.

Tropidosteptes canadensis n. sp.

Nearest to *amœnus* var. *palmeri* but darker with the antennæ stouter and black at base. Length 5 mm.

Structurally this species is very near *amoenus*. It differs principally in having the antennæ obviously stouter with the first joint shorter; the pronotum, scutellum and elytra more closely punctured and the rostrum shorter reaching only to the extremity of the intermediate coxæ, whereas in *palmeri* they attain the hind edge of the metasternum.

Color an obscure yellowish testaceous, polished. Clypeus shining black, the tumid cheeks and loræ of a lighter yellowish. Eyes nearly black; basal joint of the antennæ black, the apical dusky. Disk of the pronotum on either side, clavus, narrow costal and broad apical margin of the corium and a discal spot on the base of the scutellum obscure brownish, the latter bisected by a narrow median pale line. Callousities infuscated. Membrane slightly infuscated, its disk, a spot at the apex of the cuneus and another a little beyond it, paler; nervures nearly concolorous, the basal angle with a fuscous mark. Hind femora with two narrow fuscous subapical rings which are nearly obsolete in one specimen. Tip of the rostrum and tarsal claws black.

Described from two female examples taken on white ash by Mr. W. Metcalfe at Ottawa, Ont., August 1st 1904. It is not unlikely that this species may vary in color somewhat as does *amœnus* but the structural characters mentioned above make it certain that it is not a variety of that species. The black clypeus and basal joint of the antennæ are probably constant characters.

Tropidosteptes tricolor n. sp.

Allied to *amœnus* var. *scutellatus* but larger and still broader; black, head and abdomen rufous, antennæ, legs and cuneus whitish. Length 6 mm.

In its structural characters this species differs from *amoenus* in having the vertex and front broader, the pronotum longer and more narrowed anteriorly with a deeper and more uniform puncturation, the elytra more closely and finely punctured and the whole surface, while polished, closely and quite long pale pubescent. Aside from this it has all the characters of *Tropidosteptes* to which genus it must be referred.

Color piceous-black. Antennæ whitish with the apex of the second joint broadly infuscated. Head rufous with the eyes dark castaneous and the clypeus black. Collum of the pronotum concolorous touched with rufous at the middle; cuneus whitish pellucid; membrane deep fuscous. Rostrum, legs coxæ and trochanters almost white; tarsal claws black; metapleura white between the intermediate and hind coxæ. Abdomen rufous, obscured on the genital segment.

Described from one female specimen taken at Riverton, N. J., June 7th, 1909, by Mr. C. W. Johnson. The black color with pale cuneus gives this species somewhat the aspect of *geminus* but its red head and abdomen, pubescent surface and other structural characters will at once distinguish it.

Tropidosteptes geminus Say.

This species, which was described as a *Capsus* and well characterized by Say, was taken by me at Colden, near Buffalo, N. Y., on June 7th. 1908. I cannot find that it has been recognized by any of our later entomologists. It can readily be distinguished by its polished piceous-black color with whitish legs, basal antennal joint, and base of cuneus. The base and sides of the vertex are yellowish in my specimens.

Tropidosteptes imperialis n. sp.

Form and size of *cardinalis;* elytra mostly deep blue-black; head, pronotum, scutellum and cuneus pale or sanguineous. Length 6 mm.

Head formed as in *cardinalis;* polished, impunctate, the clypeus a little less incurved at apex; base of the vertex slenderly but distinctly carinate. Pronotum more finely punctured than in *cardinalis,* the anterior margin before the callousities impunctate, polished. Scutellum scarcely punctured, minutely transversely wrinkled. Elytra minutely and obscurely punctured.

Antennæ about as in *cardinalis*, the second joint scarcely longer than the pronotum and a little thickened at apex; the third proportionately shorter than in the allied species. Rostrum attaining the intermediate coxæ; first joint much exceeding the gula, broad. Apical tarsal joint subequal to the basal two, the second shortest.

Color: Head and beneath ferrugino-testaceous, more or less tinged with sanguineous especially on the clypeus and propleuræ. Pronotum and scutellum sanguineous, the former touched with black on the hind margins near the humeri and marked with a polished black band on the anterior margin expanded so as to cover the anterior half of the callousities; collar white; posterior margin very slenderly paler. Clavus and corium polished blue-black, the latter with a whitish line on the base of the ulnar nervure and a vague whitish patch on the base of the discal areole. Cuneus sanguineous, edged with pale and tipped with black. Membrane smoky black. Antennæ black, the second joint testaceous from near its base for two-thirds its length. Legs pale marked with piceous black on the femora and basal half of the tibiæ, the apical tarsal joint black, [fore legs wanting]. Rostrum black, the basal joint and incisures mostly pale. Venter and sternal pieces largely black.

Described from one female taken in Lee County, Texas, on April 1st, 1909, by Rev. G. Birkmann and kindly given me by Mr. W. E. Snyder of Beaver Dam, Wisc. A showy species closely allied to *cardinalis* but with finer and more obscure puncturation and different arrangement of colors.

Pœciloscytus rosaceus n. sp.

Rosy-red, more or less varied with pale, callousities blackish. Length 5½ mm.

Head proportionately shorter than in *basalis;* front convex, but obscurely striate; cheeks narrow, attaining the apex of the prominent clypeus; loræ broad, rounded at apex. Pronotum impunctate, rather more truncated behind than in *basalis;* osteolar orifices conspicuously pale. Rostrum just passing the posterior coxæ; first joint of the hind tarsi about one-half the length of the second.

Color bright rosy-red or light sanguineous; borders and middle line of the vertex and front, a few obscure arcs and the loræ pale; apex of the cheeks and the clypeus black. Antennæ dull testaceous becoming obscure toward the apex; base of the first and second joints and sometimes the broad apex of the second black. Pronotum obscurely mottled with paler, sometimes forming obscure rays, the anterior margin pale and the callousities infuscated or black. Median line of the scutellum pale. Elytra sometimes with about three obscure pale longitudinal areas, the thickened margins of the cuneus and a line on the inner angle of the corium cream white. Membrane enfumed, the nervures, an arc parallel to and beyond them and a spot at the apex of the cuneus, pale. Lower surface more or less irrorate or varied with pale, the mesosternum either side of the middle line fuscous. Legs varied with pale and dotted with darker; the knees, tips of the tibiæ and tarsi blackish.

Described from two male and three female examples taken by me at Manitou and Fort Collins, Colorado, in July 1900. This pretty species stands in the collection of the Agricultural College at Fort Collins as *Polymerus rubidus* Uhler, but I cannot find that the species was ever published.

Diaphnidia pellucida Uhler.

Of this species, which seems to be common throughout the Eastern United States and Canada, I have material from New York, Ohio, Massachusetts, District of Columbia, Colorado and California. With me it most frequently occurs on hickory trees and has a most annoying habit of biting sharply should it land where the skin is wet with perspiration. It seems to do this for sustenance and not for protection.

I have not yet been able to locate *Diaphnidia debilis* which would seem to be a little larger and paler than the present species.

Diaphnidia provancheri Burque.

This species, which was described as a *Malacocoris* on page 144 of Provancher's Petite Faune Ent. du Canada, Hemipteres, is very close to *pellucida*, but may readily be distinguished by its having the second antennal joint longer and blackish. I have taken it at Hamburg. Boston and Gowanda in Erie Co., N. Y,; Mr. W. J. Palmer obtained it at Quinze Lake, Quebec, and Prof. A. P. Morse has taken it at Alstead, N. H., all in August and September.

Diaphnidia hamata n. sp.

Closely allied to *pellucida* but more slender and marked with a cloud on the disk of the corium and another in the middle of the membrane; the membranal veins forming a double fuscous hook. Length scant 4 mm. to the tip of the membrane.

Head nearly as in *pellucida,* the vertex a little more convex and the longitudinal sulcus and basal depression nearly obsolete in the male, quite so in the female. Pronotum proportionately longer and narrower anteriorly, the callousities prominent; scutellum and elytra narrower than in the allied species as is the whole insect. Rostrum reaching to just beyond the posterior coxæ. First joint of the antennæ as long as the head, second as long as the apical two together.

Color in dried specimens pale yellowish green, the head, antennæ and pectus more fulvo-testaceous, the apical antennal joint slightly infuscated. Elytra pale greenish-pellucid, more deeply colored along the claval and apical margins of the corium; margins of the cuneus, especially the outer, and the costal and subcostal nervures of the corium toward their apex thickened and colored; commissural nervure of the clavus with a blackish line at apex and sometimes at base. Nervures of the membrane from near their base to the apex of the smaller areole thick and fuscous, thus forming a double brown hook. On the disk of the corium at its widest part is a wide subcrescentic dusky cloud and a round one occupies the middle of the membrane beyond the areoles. In all my specimens there is a bluish-green mark in the larger areole next the thickened nervure and another on the base of the cuneus which may extend on to its inner margin. Wings pellucid white; tarsi brownish at apex; tip of the rostrum black.

Described from one female and three male examples in only one of which is the pale pubescence, characteristic of the genus, retained. These specimens were all taken at Leona Heights, Almeda Co., California, in August, by Mr. J. C. Bradley. This species has a little the aspect of a *Cyrtopeltis* but the different shape of the head and want of a pronotal collar will at once separate it from that genus.

Diaphnidia capitata n. sp.

Smaller than *pellucida* and distinguished by its black head and fuscous basal joint of the antennæ. Length 3 mm.

Head polished, convex, the median sulcus nearly obsolete. Pronotum proportionately broader than in *pellucida*, the callousities prominent but small. Elytra parallel, scarcely widened apically, surface finely pale-pubescent; rostrum passing the hind coxæ.

Color whitish, tinged with testaceous or greenish in immature specimens. Head piceous-black, the eyes dark castaneous; antennæ a little infuscated at apex; basal joint and apex of the second infuscated in one immature specimen. Rostrum whitish, its apex scarcely darker in my specimens. Elytra diaphanous, the nervures scarcely thickened or pigmented. Membrane iridescent and very slightly enfumed beyond the areoles. Claws concolorous.

Described from three female examples; one taken by me in August 1907 at Lawton's Station, near Buffalo, N. Y., and two from "Psocid Glen" at Johnstown, Fulton Co., N. Y., taken by Mr. C. P. Alexander on August 30th 1910. The small size and black head will at once distinguish this species.

Calocoris uhleri n. n.

In 1895 Dr. Uhler described a *Calocoris tinctus* in Gillette and Baker's Hemiptera of Colorado, p. 34. This name however was used by Distant in 1884 for another species in the same genus so I now change that of Dr. Uhler as above. In the Canadian

Entomologist Vol. XLI, page 390, 1909, Kirkaldy substitutes the name *pinicola* for *pinus* of Uhler in this genus, but I have been unable to discover that Uhler ever described such a species. It is possible that Kirdaldy had in mind this preoccupied name *tinctus* but we have no right to assume this to be the case. For the present we must therefore consider *pinicola* a nomen nudum.

Homoptera.

Genus Cicada.

Distant in 1904 (Annals & Mag. Nat. Hist., ser. 7, vol. 14, page 426) devides the old genus *Cicada* Linn. as recognized by Latreille, Stal, etc., into two distinct genera, the larger of which he names *Rihana.* He follows Latreille and others in placing *Cicada plebeja* Scopoli as the type of the smaller, for which he retains the name *Cicada* Linn., but *plebeja* was not described until five years after the publication of the tenth edition of the Systema Naturæ and therefore it cannot be taken as the type of this genus. In fact genus *Cicada* as restricted by Distant in his catalogne of the Cicadidæ does not contain a single species included in the Linnean genus *Cicada* of 1758, every species of that genus having been transferred to some other and in most cases having been made the type of such genus. In view of this it becomes necessary to make a new selection and I now propose to name *Cicada tibicen* Linn. as the type of the Linnean genus, thus making it strictly synonymus with *Rihana* Dist. and leaving it practically as recognized by Stal.

Catonia maculifrons n. sp.

Near *impunctata* Fitch but with the elytral nervures white and more distinct and the front with four narrow broken transverse black bands. Length 5 mm.

Vertex and base of the front narrower than in *impunctata.* Front much widened below, the sides strongly arcuated, broadest just below the antennæ. Valve of the male a little broader than long, abruptly rounded at tip; plates surpassing the valve by more than its length, obtusely triangular at apex, considerably exceeded by the narrow tip of the pygofers.

Color yellowish-white; depressed areas of the vertex and the sides of the pronotum behind the eyes black. Front whitish with four narrow transverse black bands, all broken by the white carinæ, the basal three more approximate and represented by mere spots; tip of the clypeus with two minute brown spots representing two larger black marks on the sides below the lateral carinæ. Cheeks with a black band above and below the base of the antennæ. Antennæ; basal joint large and fulvous yellow, the setæ black. Propleura black below; tegulæ entirely pale. Mesonotum tinged with fulvous and obscurely marked with fuscous on the sides and next the white carinæ; tip white. Elytra brownish hyaline with a few smoky clouds toward the base; the apical one-third mostly infuscated and the costa deeper brown; nervures strong and white, impunctate. Wings smoky hyaline with fuscous nervures. Legs and pectus whitish; abdomen fuscous with the margins narrowly yellowish; the genital pieces white.

Described from one male taken in the Huachuca Mts., Arizona, on July 23d, by Mr. H. G. Barber, to whose kindness I am indebted for the specimen. This species is quite distinct from any other known to me by the six black spots on the base of the front. It seems to have somewhat the aspect of *Plectoderes lineaticollis* Fowler, a species which I inadvertently quoted as *laticollis* in my paper on this genus (Can. Ent. xlii., p. 264, Aug. 1910).

Catonia majusculus n. sp.

Allied to *cara* but longer and narrower. Color pale yellowish tinged with ferruginous, the elytra clouded with brown. Length 7 mm.

Head narrow; vertex scarcely produced before the eyes, nearly square, the carinæ almost obsolete. Front but little wider toward the apex, the carinæ obtuse and strong. Clypeus elongate. Pronotum nearly as long as the vertex, ecarinate. Mesonotum short, the carinæ obvious but not strong. Elytra long, parallel. Last ventral segment of the male deeply quadrangularly excavated, the margin at the middle slightly angularly produced; plates oblong, obtuse at apex, exceeding the obtusely produced angles of the last segment by one-half their length. Pygofers longer than the plates. Valve wanting.

Color pale yellowish ferruginous; the pronotum, tegulæ and legs almost white. Mesonotum ferruginous shading to fuscous anteriorly; sides and apex whitish. Meso- and meta-pleuræ slightly infuscated. Elytra obscure whitish subhyaline, slightly clouded toward the apex; clouded with brown on the basal and commissural margins and at the base of the appendix, the commissural margin twice interrupted with white; corium with indications of two oblique brown vittæ across the middle, the costa darker apically, interrupted on the base of the stigma and at the tips of the apical nervures; short transverse nervures mostly white. Wings somewhat infuscated, with dark nervures.

Described from one male and two female examples taken in the Huachuca Mts., Arizona, on July 28th and 29th, by Mr. H. G. Barber. This obscurely marked species belongs to the section of the genus having the apex of the head smooth and rounded to the base of the vertex. It agrees with *cara* in coloring but may be distinguished by its elongated form and different marking. The ferruginous mesonotum shading to brown anteriorly and the broad smooth whitish pronotum seem to be constant characters.

Oliarus placitus n. sp.

Allied to *vicarius* and *5-lineatus*. A large elongated species; the females generally marked with a longitudinal fuscous vitta on the elytra. Length, male 9½ mm.; female 11 mm.

Female: Vertex as broad as in 5-*lineatus* and as long as in *vicarius*. Front and clypeus together proportionately longer than in 5-*lineatus* and less angled at the sides; distinctly broader than in *vicarius;* base of the clypeus distinctly broader and less deeply inserted in the front than in either of the allied species. Pronotal carinæ straighter and more parallel than in *vicarius*. Elytra long and parallel sided; radial and ulnar nervures forked on the same line but farther from the base than the point of union of the claval nervures. In *vicarius* the point of union of the claval nervures is beyond the others while in 5-*lineatus* the three are about on a line; stigma still longer than in *vicarius*. Elytral setæ less conspicuous than in the allied species. Hind femora with three equidistant teeth, the basal very minute and placed close to the base.

Color ferruginous-brown or almost castaneous; the sides of the mesonotum darker; meso- and meta-pleuræ and legs paler, the femora darker; anterior and intermediate tibiæ twice banded with brown. Abdomen fuscous, the segments edged with white. Carinæ of the vertex with a median pale spot; those of the face paler, the marginal forming a pale hook either side of the base of the clypeus. Elytra whitish-hyaline, the nervures pale dotted with black; stigma and a longitudinal discal vitta which begins at the base of the anteapical areoles, fuscous; the transverse, and the tips of all the apical nervures blackish and bordered with fuscous. Commissure usually with a fuscous vitta to near the apex of the clavus. Generally there are two fuscous marks on the costa near the middle, a mark on the inner branch of the radial vein next the fork, another on the fork of the inner ulnar vein and a similar one opposite to it on the outer fork, and a round spot on the fork of the claval vein. The fuscous vitta on the apex and that on the commissure may be reduced or wanting but the spots on the nervures seem to be constant.

The male is smaller and wants most of the elytral markings but has the four dots on the nervures; and the stigma, the transverse veins, and the tips of the apical are fuscous. The male genital characters in this species are very distinct. The median tooth of this segment is long and broad, roundedly expanded and feebly bilobate at apex where its slender margin is reflexed. Side pieces of the genital segment obtusely triangular, but little surpassing the median tooth. Plates narrow and curved at base, abruptly expanded and almost square beyond the apex of the median lobe.

their inner margins contiguous and their outer angles produced. Pygofers forming a hood over the apex of the plates, armed with a slender tooth dorsally.

Described from one male and ten female examples taken at Spring Creek, Ga., in June 1911, by Mr. J. G. Bradley, and one male taken by me at Ft. Myers, Fla., in May 1908.

Oliarus slossoni n. n.

In 1908 I described in the Proceedings of the Academy of Natural Sciences of Philadelphia (vol. 59, p. 487) an *Oliarus* taken by Mrs. Slosson at Biscayne Bay, Fla., as *O. hyalinus* n. sp.; overlooking the fact that this name was preöccupied for *O. hyalinus* Fieber of Europe. I therefore now rename the species after its discoverer. The unique male type is I think the only specimen I have seen or that has yet been reported. More recently Mrs. Slosson has sent me for study two smaller but closely allied specimens taken by her in Florida, which I at first thought might be females of this species, but more careful study with related material shows that they are undoubtedly new. For this form I now suggest the name:

Oliarus difficilis n. sp.

Smaller than *slossoni* with the vertex broader, the clypeus proportionately shorter, the mesonotum paler between the lateral carinæ and the elytral nervures distinctly punctate. Length 6 mm.

Vertex much narrower than in *slossoni* but still at least one and one-half times longer than broad. Front broad, but proportionately longer with a narrower base than in either *slossoni* or *aridus*. the median carina distinctly but narrowly forked at base while in both of the allied species this fork is as broad as long and is obscure in *aridus* and almost obsolete in *slossoni*. Clypeus scarcely longer than the front, about twice as long in both the allied species; very minutely transversely striate, and viewed from the side or below exhibiting heavy oblique striæ. Pronotum very short. Mesonotum tricarinate. Elytra proportionately a little broader than in *slossoni*, the nervures heavy, evidently but not strongly punctate, the anastomoses heavily infuscated; stigma large as in *aridus*.

Color piceous brown, almost black in places; carinæ of the head and pronotum, margins of the abdominal segments, tegulæ and apex of the mesonotum testaceous; disk of the mesonotum pale castaneous between the lateral carinæ; apex of the front with an indefinite paler spot on either side of the base of the clypeus; clypeus almost fulvous in one example. Mesosternum and pleuræ whitish as in the allied species. Legs brown, becoming paler toward their apex, the incisures pallid. Elytra obviously whitish-hyaline, nervures pale, fusco-punctate, infuscated only on the forks, transverse veins and at apex; commissural nervure twice alternated with white. Nervures of the wings slender, fuscous. In one example the base of the elytra bears a fuscous cloud as in *slossoni* and *humeralis*.

Described from two females taken at Belleair, Fla., by Mrs. Annie Trumbull Slosson.

Oecleus borealis n. sp.

Closely allied to *obtusus* Ball; black with the carinæ conspicuously fulvous. Length 6 mm.

Head broader than in some of our species, almost semicircular in outline. Vertex rather wide at apex, narrowed to a point at base; viewed from above produced hardly one-half its width before the eyes. Front strongly narrowed at base where the median carina is nearly obsolete. Pronotum deeply subangularly emarginate. Mesonotum distinctly 5-carinate.

Color black; all the carinæ, with the narrow margins of the pronotum, mesonotum and pelural pieces, fulvo-testaceous. Metapleura and base of the abdomen covered by a testaceous band; the base of the genital segments of the same color in the female. Legs pale, lineate or clouded with fuscous. Antennæ black on a narrow pale base. Usually there is a broad fulvous vitta near the lateral angles of the mesonotum. Elytra nearly hyaline, becoming distinctly smoky at apex; nervures strong, the punctures distinct at base and as far as the apical areoles; stigma unusually short and broad, sometimes more elongated. In dark examples the apical nervures are more or less clouded with fuscous and the pale commissure is twice interrupted with fuscous.

Described from numerous examples taken in New York, New Jersey, Florida and Washington. D. C. (Types from N. J. and Fla.) This is the species I have heretofore determined as *decens* Stal, but it is much smaller and darker and certainly must be distinct. *O. obtusus* Ball sometimes has black vittæ between the mesonotal carinæ and is very close to this species, but it has the stigma narrower, the elytral nervures not so heavy and the colors paler.

Oecleus capitualatus n. sp.

Size of *pellucens* Fowler but a little broader with a smaller head and shorter vertex; black, lineate with fulvous on the mesonotum. Length 7 mm.

Head small, little longer than broad, scarcely wider than the greatest distance between the mesonotal carinæ. Vertex nearly linear, surpassing the eyes by less than its own width if viewed vertically from above. Front about as in *pellucens*, the median carina obsolete toward its base. Pronotum deeply subangularly emarginate, rather broadly rounded either side. Mesonotum 5-carinate.

Color black; all the carinæ of the head, pronotum and mesonotum and the edges of the pleural pieces and abdominal segments fulvous; hind edge of the pronotum and tegulæ pallid. Legs fulvo-testaceous; femora lineate and the tibiæ obscurely banded at base and apex with fuscous. Elytra almost pellucid; nervures yellowish, fusco-punctate to their apex; stigma narrow and fuscous, paler posteriorly, preceded by a white node. Nervures of the wings fuscous. Antennæ brown or rufous, the second joint infuscated in the male.

Described from two male and two female examples taken in the Huachuca Mts., Arizona, July 15th, by Mr. H. G. Barber, This is a large dark species with a conspicuously small head.

Oecleus quadrilineatus n. sp.

Allied to *capitulatus* but with a broader vertex, tricarinate mesonotum and narrower elytra with their nervures impunctate beyond the middle. Length, male 5 mm., female 6 mm

Head rather large; vertex distinctly widened anteriorly, especially in the female. Front broader than in *capitulatus,* widening almost from its base, its apex deeply impressed, the median carina obsolete at base. Pronotum deeply but not acutely emarginate, the lateral carinæ conspicuous. Mesonotum with three parallel carinæ. Elytra narrow, the costal areole of equal width from near its base, the costa not broadly arcuated as in *capitulatus.*

Color black, opaque; antennæ and carinæ of the vertex, front, clypeus and pronotum fulvous-yellow; the sides of the pronotum whitish. Mesonotum marked with four equidistant longitudinal fulvous vittæ placed between the concolorous carinæ. Base of the rostrum, lateral carinate edge of the mesopleura and legs yellowish, the latter lineate with fuscous on the femora and touched with the same color on the extreme base and apex of the tibiæ. Metapleura and an irregular area on the base and another on the apex of the venter whitish. Elytra whitish-hyaline; nervures punctate to the anteapical areoles, then fuscous to the apex; stigma a little expanded anteriorly; commissure alternated with fuscous at the middle and apex.

Described from one pair taken in the Huachuca Mts., Arizona, in July 1905, by Mr. H. G. Barber. This species may be recognized by the deep black tricarinate mesonotum marked with four conspicuous fulvous vittæ.

Oecleus venosus n. sp.

A stout black species with tricarinate mesonotum, with heavy fusco-punctate elytral nervures and large black stigma. Length 6 mm.

Vertex deeply excavated, almost parallel, a very little wider anteriorly, surpassing the eyes by less than its own width. Front broad opposite the antennæ, regularly narrowed to near the base and to the apex, median carina almost obsolete above the antennæ; clypeus narrow with a strong median carina. Pronotum deeply angularly emarginate, becoming broad either side, the lateral carinæ placed near the margin of the eyes. Mesonotum with three strong parallel carinæ, the fourth and fifth barely indicated by pale lines. Elytra moderately broad, parallel, the costa straight from near its base.

Color: opake black; carinæ of the head and mesonotum fulvous, the median carina of the front indicated only by a pale dash between the antennæ. Pronotal margins and carinæ pale; narrow center of the pronotum marked with four whitish points: two approximate behind the vertex and a larger calloused one either side. These pale dots are distinguishable in many of our species, but are more distinct in this. Basal margins and apex of the mesonotum pale. Antennæ black, touched with pale at apex. Base of the rostrum pale. Legs mostly black, the joints and middle of the tibiæ pale. Metapleura and sides of the abdomen whitish. Elytra nearly hyaline; nervures strong, heavily fusco-punctate; at apex and on the base of the apical areoles with a small fuscous cloud. Stigma large, black, covering most of the cell, marked with white before; costal nervure anterior to the stigma slender, pale brown; commissure whitish with two heavy fuscous marks beyond the middle of the clavus.

Described from one female taken at Pasadena, California, June 11th 1910, by Mr. Fordyce Grinnell, Jr. This species is so strongly marked and distinct I do not hesitate to describe it from a single example.

Oecleus pellucens Fowler.

A large fulvous species with small head and linear vertex which is strongly produced before the eyes. Length to tip of closed elytra 7 mm.

Female: Head narrow, subconical, truncate behind. Vertex linear, projecting for two-fifths of its length before the eyes. Front narrow, less widened apically than in our other species; basal one-third almost linear and about twice as wide as the vertex which it meets at somewhat less than a right angle. Pronotum short, at the middle scarcely wider than the vertex; but little expanded laterally. Mesonotum 5-carinate.

Color fulvo-testaceous becoming almost reddish on the mesonotum, clypeus and edges of the pleural pieces. Front and vertex deep black with strong pale carinæ. Clypeus scarcely touched with fuscous either side of the median carina. Antennæ pale. Pronotum testaceous, faintly clouded in the depressions either side. Mesonotum fulvous, marked with black between the carinæ and on the anterior margin. Elytra uniformly whitish-hyaline and faintly smoky; nervures distinct, whitish and regularly punctate to their apex. Stigma long and narrow, brown. Wings with fuscous nervures. Disk of the pleural pieces and abdominal segments mostly black. Legs lineate with black.

I have examined three females of this species taken at Phoenix, Arizona, on May 17th and Sept. 13th, 1902, by Mr. H.

G. Barber. It is distinct by its fulvous color, clear markings, regularly and distinctly punctate nervures, narrow produced vertex, narrow black front and fulvous clypeus.

Ormenis barberi n. sp.

Allied to *septentrionalis* but larger and of a more opaque and yellowish green. Length to tip of closed elytra 12 mm.

Front transverse; apical margin nearly as long as the basal, distinctly roundedly emarginate across the base of the clypeus; lateral elevated margins regularly arcuated; median keel very obtuse but distinct toward the base; surface of the front regularly rounded over to the pronotal margin with no transverse ridge indicating the vertex or barely a trace laterally, deflected almost parallel with the margins. Pronotum as in *septentrionalis*, the carinæ obsolete. Mesonotum flattish with the carinæ nearly obsolete as in the allied species. Elytra shaped as in *septentrionalis* except that they are a little wider basally, the costal area being distinctly less narrowed at base; nervures thicker and more reticulated with the basal areas broader than in *septentrionalis;* apical margin truncated with both angles rounded as in that species; both subapical lines united with the subcostal nervure, the inner sometimes much broken on its basal half, placed a little nearer to the outer than that is from the apical margin.

Color a rather dull yellowish green, the whole upper surface more or less whitish-pruinose; clypeus, lower surface of the body, legs and costal margin pale yellowish tinged more or less with fulvous or even with sanguineous, especially on the tibiæ. Front and sometimes the mesonotum paler or tinged with fulvous. Second antennal joint orange, the seta black. Spines of the posterior tibiæ tipped with black.

Described from five examples, representing both sexes, taken in the Huachuca Mts., Arizona, in July 1905, by Mr. H. G. Barber of New York.

This is a larger and more yellowish species than *septentrionalis;* the front wants the obtuse transverse subbasal carina and has the apex more emarginate and subequal to the base, not straight and distinctly shorter as in *septentrionalis;* the form and venation of the elytra also shows a constant difference as noted. *Ormenis pallescens* Stal is a larger and paler species with longer front and acute inner elytral angles. I take pleasure in naming this species after the enthusiastic Hemipterist whose diligent collecting in the Huachuca Mountains has added a number of interesting species to our fauna.

Ormenis saucia n. sp.

Allied to *perpusilla* Walker. Pale greenish-white with the clypeus and mesonotum fulvous. Length 7—10 mm.

Vertex linear but quite sharply defined. Front at least one-third broader than long at the middle; sides arcuated and below following the line of the clypeus; apex deeply excavated for the rounded base of the clypeus; disk with a broad ill-defined median carina. Carinæ and impressed points on the pronotum obsolete or the points sometimes barely distinguished. Mesonotum moderately convex, the carinæ obsolete, the disk flattened posteriorly. Elytra twice as long as broad; costal and sutural margins nearly parallel, the former moderately bowed at base; apex truncated, the angles about equally rounded; the two subapical lines parallel but approaching to join the costal nervure, the space between them equal to that between the exterior and the apical margin.

Color pale green or almost white, the paler specimens perhaps not fully developed. Eyes brownish; clypeus and mesonotum brownish- or rufo-fulvous and there is a touch of the same color on the pleuræ and tarsi; sides of the clypeus with paler striæ and its middle line is usually brownish. Elytra very feebly infuscated at apex.

Described from four examples: one taken at St. George, Utah, by Prof. H. F. Wickham, in July; another taken at Los Vegas, Nevada, in September, by Mr. J. C. Bradley, and two taken at Yerington, Nevada, in July at an altitude of 5000 feet, by J. P. Baumberger, and kindly sent me for study by Mr. C. E. Olsen of Maspeth, L. I. This species may be distinguished by its pale green color, its fulvous or rufescent clypeus and mesonotum, and the broad front.

Aphelonema obscura n. sp.

Allied to *simplex* but smaller and darker in color. Vertex transverse very short, but little broader than the bounding carinæ. Front ovate oblong, distinctly narrower than in *simplex;* median carinæ feeble; clypeus but moderately incurved, feebly carinate. Pronotum regularly rounded before without the slight angle observable in *simplex*, evenly but obscurely pustulate, median carina obtuse; hind margin but feebly acuated; mesonotum with the smooth median area narrower than in the allied species, the three carinæ distinct but not sharp. Elytra in the brachypterous form truncated, reaching to about the middle of the tergum, the nervures reticulated but not conspicuous. Length 2½ mm.

Color luteous brown becoming darker fuscous-brown beneath and on the pustulated portion of the face, pro- and mesonotum, and black on the clypeus, sides of the face and venter; elytra, middle compartment of the mesonotum and front distinctly paler, with a dusky cloud on either side of the latter; apical one-half of the last ventral segment and slender margins of the basal segments paler. Tergum with a double row of incomplete blackish ocellated marks on either side. Legs pale, the femora obscurely lineated with fuscous, the tarsal claws black.

Described from two female examples taken at Tipton, Ga., Sept. 8th, 1910, by Mr. J. C. Bradley. The macropterous form and male are unknown to me. This inconspicuous little species might be considered as a small dark variety of *simplex* were it not for the narrower and distinctly oval front.

In my description of *decoratus* (Proc. Acad. Nat. Sci. Phila., LIX., p. 492,) I inadvertently neglected to give the length which should have been 3 mm.

Genus Lamenia Stal.

There has been some controversy as to the proper systematic position of genus *Lamenia*, Stal placing it in the *Derbinæ*. Ashmead in the *Flatinæ* and Kirkaldy in the *Cixiinæ*, the latter claiming that the termination of the claval vein on the commissure excludes it from the *Derbinæ* entirely. A careful study of this and the related genera convinces me that Stal was correct in placing it in the *Derbinæ*. The elytral venation in this subfamily presents a wide variation not only among the genera but in a less degree among the species. In the more typical forms of *Lamenia*, those allied to *vulgaris*, the claval vein certainly attains the commissure before the apex of the clavus but in *uhleri* it can be distinctly traced to the apex and in *Mysidia* and some allied genera both the claval vein and the suture make an abrupt curve to the commissure. I think a more rational classification would distinguish this subfamily and the *Delphacinæ* by their elongated and more or less flattened antennæ, and would connect them with the other Fulgoridæ through *Flatoides* and the allied genera of the *Flatinæ* in which the antennæ have two joints somewhat elongated but scarcely flattened. The *Delphacinæ* with two extended joints and the *Derbinæ* with one I believe are strictly parallel groups following the *Flatinæ*, but unfortunately we cannot so place them in a linear arrangement.

I would, therefore, consider *Lamenia* our most primative form of the *Derbinæ* as it has the antennæ but slightly enlarged and flattened, the front proportionately broad and the elytral venation simple. It is but a step to *Cenchrea* in which the venation is more characteristic, the antennæ more flattened and the front narrower and more deeply sulcate. *Patara*, *Anotia* and *Amalopota* show still more specialization while in *Otiocerus* we reach the extreme in which the antennæ are split into two or more filaments and the front has disappeared entirely in a foliaceous and deeply sulcate carina. In the South American and oriental genera the specialization has been more along the line of a complicated venation.

Key to the nearctic species of *Lamenia.*

Elytra fuscous or black, 1.
Elytra white clouded with fuscous in the areoles, 6, *maculata.*
1. Elytra blackish fuscous; male plates with an apical tooth, 2.
–. Elytra pale brownish fuscous; male plates without an apical tooth, 5, *edentula.*
2. Head piceous black or mostly so, 3.
–. Head fulvous or testaceous, 4.
3. Larger (5 mm.); inner margin of the male plates sinuated, 1, *vulgaris.*
–. Smaller (4 mm.); inner margin of the male plates rectilinear or with a reëntrant angle more or less pronounced, 2, *obscura.*
4. Smaller (4½ mm.); head and pronotum flavo-testaceous, mesonotum piceous; inner margin of the male plates excavated for nearly their whole length, 3, *californica.*
–. Larger (5 mm.); head, pronotum and mesonotum fulvo-testaceous; inner margin of the male plates produced, contiguous at their middle only, 4, *præcox.*

1, **Lamenia vulgaris** Fitch.

Catal. Homop. Ins. N. Y. State Cab., p. 47, 1851, (*Pœciloptera?*).
Van Duzee, Can. Ent., XLI, p. 381, 1909, (*Lamenia*).

This large northern species has the lateral carinæ of the front marked with pale toward the base and the legs and post-pectus are also pale. Sometimes the abdominal segments are touched with orange as mentioned by Dr. Fitch. The pronotum is conically, almost angularly, emarginate behind and there is a distinct carina across the base of the front.

The male plates have their inner margins divergent on their immediate base, then somewhat sinuated to their apex which has an unusually large pale tooth. Last ventral segment of the female triangular with its margins nearly rectilinear. My material in this species represents New York and Kansas only, but I have seen specimens from most of the northeastern states and Canada.

2, **Lamenia obscura** Ball.

Can. Ent. xxxiv, p. 262, 1902.

A widely distributed species differing from *vulgaris* in being smaller, in having the vertex shorter with the frontal carinæ less prominent over the apex of the head, and the hind margin of the pronotum more deeply subangularly emarginate. Usually the carinæ of the head and pronotum are all more or less distinctly pale. The base of the front has a transverse carina in this species but it is less conspicuous than in *vulgaris*. In some males of this species there is a distinct reëntrant angle on the inner margin of the plates but I cannot otherwise distinguish them. In the more typical examples these margins are almost straight and approximate except for a short space at base. The last ventral segment of the female is shorter and more rounded at apex with the sides feebly sinuated near the basal angles.

My material for this species is from Me., Mass., N. Y., N. J., N. C., Fla. and Kansas.

3, **Lamenia californica** Van Duzee.

Can. Ent., xxiii. p. 169, 1891.

This species is about the size of *obscura* but is distinct in having the head, pronotum, pectus and legs pale yellowish testaceous. The inner margins of the male plates are excavated so they meet only at base and tip. The types were from California but Mr. H. G. Barber has recently sent me a specimen taken at Phoenix, Ariz., July 25th, 1902. It probably occurs throughout the hot arid regions west of the Rocky Mts.

4, **Lamenia præcox** n. sp.

Near *vulgaris* but a little smaller with the head, pronotum, mesonotum and pectus fulvo-testaceous. Length 4½ mm.

Vertex broader than in *vulgaris* with the frontal carinæ more prominent over the apex. Front very little contracted at base, median carina nearly obsolete, lateral laminate above. Pronotum a little longer than in the allied species, the anterior and posterior margins parallel, regularly arcuated. Plates of the male meeting only at the middle, strongly retreating to their base and apex, their apical hooks slender and a little curved upward. Color smoky black, pruinose; head, pronotum, mesonotum, entire pectus and edges of the abdominal segments fulvo-testaceous or inclined to ferruginous. Legs pallid becoming greyish or brownish on the tibiæ and anterior femora; apex of the rostrum and tips of the tarsal joints blackish. Transverse veinlets at the base of the apical elytral areoles white.

Described from two male and two female specimens taken in the Huachuca Mts., Ariz., by Mr. H. G. Barber.

5, **Lamenia edentula** n. sp.

Allied to *obscura* but smaller and paler. Testaceous brown tinged with ferruginous on the head and scutellum; wings and elytra at apex somewhat enfumed; eyes and abdomen fuscous brown, the segments of the latter pale margined. When immature these brown parts are more or less rufescent. Legs pallid with the tarsi fuscous at apex; rostrum pale, black at apex. Nervures of the elytra strong, concolorous; the row of short transverse nervures at the base of the apical areoles and the stigmatal, touched with white. In many individuals the basal areoles of the elytra are slightly infuscated bringing the pale nervures into stronger contrast. Nervures of the wings strong and fuscous. Plates of the male subcylindrical, without a trace of the apical tooth found in *vulgaris* and *obscura;* their suture slightly parted at base and presenting a narrower linear apical notch. Length 4mm.

Described from seven specimens, of both sexes, taken at Austell, Ga., August 27th 1910, by Mr. J. C. Bradley. I also took one female at Riverton, N. J., August 17th 1902, which seems to agree in every respect with the Georgia material. So far as the color alone is concerned this might well be considered but an immature form of *obscura* but the specimens I have seen are uniformly smaller, the apex of the tarsi are blackish and the form of the male plates is distinctive.

6, **Lamenia maculata** n. sp.

Most closely allied to *edentula* but more slender with longer elytra. Greyish white, mottled and spotted with fuscous. Length to tip of the elytra 5 mm.

Vertex apparently wanting, the base of the front rounding over to the hind margin of the head, viewed from above not surpassing the eyes; front slightly expanded at apex. Pronotum short, deeply but roundedly emarginate behind. Inner margin of the male plates with a linear excavation almost to their apex, leaving only a blunt tooth before the oblique apical margin, the upper angle of this apical margin produced in a short triangular tooth in place of the long spur-like process found in most of our species.

Color greyish-white; front with a fuscous median vitta which extends over the clypeus and is expanded about an oval white spot on the apex of the front; dorsally this fuscous vitta extends across the pro- and mesonotum; cheeks infuscated and marked with a triangular black spot at their lower angle; antennæ testaceous, infuscated below. Pronotum marked with a black patch behind the eyes; lateral angles of the mesonotum infuscated. Pleural pieces with a fuscous spot superiorly. Legs white, the femora slightly infuscated; tibiæ banded with fuscous at base and apex; tarsi brown, the posterior mostly white. Adomen blackish edged with white. Elytra infuscated in each of the areoles; nervures strong, white at base, infuscated at apex; wings white with slender fuscous nervures.

Described from one male taken at Trenton, Ont., August 17th 1911, by Mr. J. D. Evans, to whom I am indebted for many interesting Hemiptera from Ontario. The white color of this species with fuscous mottlings will at once distinguish it from any other described form.

On the genera **Delphax** and **Liburnia.**

A consideration of the facts given below convinces me that we must use the name *Liburnia* Stal for the large group of species of which *pellucida* may be taken as the type; that *Delphax* must take *crassicornis* Fabr. as its type and that *clavicornis* is the type of *Asiraca* Latr. Of these three genera the earliest, *Asiraca*, was described by Latreille in 1796 under the name *Cercopis* (Precis, page 91) which he changed to *Asiraca* in the page of addenda at the end of the same volume. Like all the genera in this rare work it was described without mention of species. Two years later Fabricius (Ent. Syst., Suppl., page 511, 1798) redescribes the genus as *Delphax* and on page 522 of the same volume describes two species: 1, *crassicornis* and 2, *clavicornis*. In 1801 Latreille (Hist. Nat. des Crust. et Ins. III, page 259) again describes it as *Asiraca* with species *clavicornis*, *crassicornis* and *longicornis*, which latter, however, he never describes. In another two years Fabricius again characterizes it as *Delphax* (Syst. Rhng. page 83–84, 1803) and adds eight new species while the very next year Latreille (Hist. Nat. des Crust. et Ins., XII, page 316) for a third time describes it as *Asiraca* with nine species and complains that Fabricius in redescribing his genus has unwarrantably changed its name to *Delphax*. However in 1807 (Gen. Crust. et Ins., III, page 167–168) he tries to straighten out the matter by adopting *Delphax* for *pellucida* and its allies and retaining *Asiraca* for *clavicornis* and its allies. This procedure he still further clinches in 1810 (Consid. Genl., page 434) by naming *clavicornis* as the type of *Asiraca* and *striata* (*) as the type of *Delphax*. This would settle the standing of these two genera were it not that by the rules of the International Code *Asiraca* has no standing until 1801, because no species was named when the genus was established, and neither *striata* nor *pellucida* can be taken as the type of *Delphax* as they were not among the original species of that genus. The types of both of these genera, if both are retained, must be taken from the two species originally included in each genus — *crassicornis* and *clavicornis* — and as Latreille has named *clavicornis* as the type of *Asiraca* we get by elimination *crassicornis* as the type of *Delphax*, thus making it synonymus with *Aræopus* Spinola.

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* I fail to find this species in the Oshanin Catalogue. Germar in 1818 seems to be the last to record it although it is listed as a Liburnia by Stal in 1869.

We now come to the name *Liburnia*. This was first used by Stal in 1866 (Hemip. Afr., IV, page 179) where he places as its *first* synonym "*Delphax* Auctor" and as a *second* "*Embolophora* Stal". This genus *Embolophora*, which was first described by Stal in 1853 as *Embolophpora*, is here placed as section "a" of his new genus *Liburnia* and on this account Kirkaldy uses it to supplant *Liburnia*, and even the conservative Distant employes its type, *monoceros*, as the type of *Liburnia* thus making Stal rename his own genus which I consider unwarranted. The fact is Stal recognized the fact that the *Delphax* of Latreille and later authors was not and could not be the *Delphax* of Fabricius and he was merely giving a new name to that large congeries of species of which *pellucida* may be taken as the type, as is conclusively shown by his naming "*Delphax* Auctor" as its first synonym. His inclusion of *Embolophora monoceros* as the first section and species of *Liburnia* was an unfortunate mistake in the light of the "first species" cult now prevalent, as it is certainly distinct generically from *pellucida* and should be eliminated at once from *Liburnia*. This would leave that genus a large but fairly homogeneous assemblage of species of world-wide distribution.

If we retain *Delphax*, as I think we must, the synonomy will stand:

Delphax Fabr., 1798; type *crassicornis* Fabr.
Synon. *Aræopus* Spinola, 1839.

Asiraca Latr., 1801; type *clavicornis* Fabr. (*Asiraca* has no standing in 1796.)

Embolophpora Stal, 1853; type *monoceros* Stal.

Liburnia Stal, 1866; type *striata* Fabr. or *pellucida* Fabr.
With the subfamily name *Delphacinæ*.

Liburnia tuckeri, n. sp.

Closely allied to *detecta* but smaller and with a narrower front. Length 2½ mm.

Macropterous form; Vertex short, transverse, not exceeding the eyes, basal fova about twice broader than long; apical small, triangular, little longer than broad at base. Front linear, a little narrowed between the eyes, its apex but feebly emarginate. Clypeus short. Pronotum broad, scarcely longer than the vertex. All the carinæ prominent. Elytra short with the nervures indistinct toward the base. Genital segment of the male long cylindrical, the aperature but little oblique; plates ligulate, regularly arcuated, nearly in conformity with the aperature of the pygofers. Pygofers of the female short, scarcely exceeding the connexivum, a little narrowed apically.

Color dull whitish testaceous, or a little tinged with yellow on the scutellum and beneath; slender margins of the carinæ on the front and clypeus and sometimes the apical fova of the vertex, eyes, tip of the rostrum, claws, a spot on the metapleura, a point on the apical segment of the connexivum, a cloud on the base of the tergum in the female, blackish. In the male the disk of all the pleural pieces is fuscous and the abdomen is black with the edge of the connexivum and a band near the base of the tergum fulvo-testaceous. The elytra are whitish hyaline in the female with the nervures darker toward the apex and punctate. In the male they are distinctly clouded within and toward the apex, with the nervures punctate and darker in the clouded portions.

Described from one male taken by me at St. Petersburg, Fla., in April, 1908, and a female taken by Mr. E. S. Tucker at Plano, Texas, and kindly sent me for study by Prof. Herbert Osborn. Through an unfortunate mixing of my material I redescribed *Liburnia detecta* as *circumcincta* in my report on Florida Hemiptera.

Genus Cercopis Fabr.

After a careful study of this genus I am forced to the conclusion that *Triecphora sanguinolenta* (Linn.) must be taken as its type. The genus was founded by Fabricius in 1775 (Syst. Ent., page 688) with nine species of which the first, *fenestrata*, is a *Ricania;* of the others *sanguinolenta* is the second, *carnifex* the fourth and *spumaria* the fifth. In his later works Fabricius did not change the genus except by omitting *fenestrata* and adding new forms. Latreille, the next writer to treat of the genus, in 1801 (Hist. Nat. des Crust. et des Ins., III, page 260), gives a description of it and names *spumaria* as an "example". This Kirkaldy considers as naming the genotype and therefore makes *Cercopis* replace *Aphrophora* Germ. on the assumption that *spumaria* Linn. is the same as *alni* Fallen (= *spumaria* of Germar, the first species and allowably the type of Aphrophora). No further change is made in the genus until 1810 when Latreille (Consid. General, page 434) in giving a list of the genera "avec l'indication de l'espece qui leur sert de type" names *sanguinolenta* Linn. as such type of *Cercopis*. If I rightly understand the International Code the direct naming of the type in 1810 must take precedence over the mere naming of an "example" in 1801. Practically this same view is taken by S. A. Rohwer in his recent paper on the genotypes of the *Tenthredinoidea* (U. S. Dept. of Agric., Bureau of Ent., Technical Series No. 20, part 2, 1911.)

I am unable to discover any justification for Stal's naming *carnifex* as the type of this genus in 1869 (Hemip Fabr., II, page 11) As *sanguinolenta* is the type of *Triecphora* that genus must fall as a synonym of *Cercopis*.

Genus Monecphora, A. & S.

I can see nothing to be gained by uniting the four genera of Amyot et Serville, *Tomaspis*, *Triecphora* (= *Cercopis* Fabr.), *Monecphora* and *Sphenorhina* as was done by Stal in 1866, (Hemip. Africana, vol. IV, page 56). While closely related their general facies and distribution are sufficiently distinct and they have as good right to the distinguished as many of the generally accepted genera. It seems to me that a series of species in any of the larger generic groups which separates out from the others in a synoptical key by some clearly defined character is entitled to generic standing if a student wishes to so designate it. In many cases other students would doubtless call such a series a subgenus but in larger plastic groups where Nature absolutely refuses to draw a distinct line of demarcation between the genera we must use such divisions as will most facilitate the determination of our species.

Cercopis (*Monecphora*) *schack* Fabr. does not seem to have been recognized by later entomologists. It was described from "America septentrionalis" and may refer to some variety of *Monecphora bicincta* Say.

I cannot follow Ball in uniting *Monecphora inferans* Walk. and *Sphenorhina simulans* Walk. with *bicincta*, they seem to me to represent a distinct species.

Philænus spumarius Auct.

According to Kirkaldy Dr. Horvath has shown that the name *spumarius* must replace *Aphrophora alni* Fallen and the species commonly known as *spumarius* must be called *leucophthalma* Linn. but as I have not seen Horvath's paper and this change does not seem to have been accepted by any of the recent European entomoligists it seems best to retain the old nomenclature, for the present at least.

I have been unable to find a mention of *Cicada œnotheræ* Scopoli (Ent. Carniola, page 114, 1763), but it appears to be near *Philænus spumarius* variety *lineatus* Fabr. The *œnotheræ* of Germar (Mag. d'Ent. IV, page 53, 1821) is a synonym of variety *pallidus* Zett. of this species.

Genus Clastoptera Germar.

Dr. Ball's paper on this genus (Proc. Iowa Acad. Science, III, pages 182 to 194, 1895) is very useful and complete but I cannot accept his synonomy in all cases. Under *obtusa* Say he includes the true *achatina* Germ. as a variety of his subspecies *obtusa*. It may be distinguished by being fulvous anteriorly and fuscous posteriorly with a whitish band across the clypeus. The variety he calls *achatina*, as I know from a specimen determined by him, is mostly fuscous with the vertex and anterior margin of the pronotum narrowly fulvous, the former with a dark line. I propose the name variety *tristis* for this form.

He also includes *testacea* and *pini* Fitch as varieties of his subspecies *osborni* Gill. & Baker. I have seen nothing that agrees with Fitch's description of his *testacea* but his *pini* is certainly the black variety of *proteus* named *nigra* by Ball. Fitch describes *pini* as shining black and but 0.14 inch in length neither of which will apply to any variety of *obtusa*. I prefer to call all these "subspecies" simple varieties.

Clastoptera lineaticollis Stal.

This is certainly a distinct species and not a variety of *obtusa* Say as stated by Dr. Ball.

Clastoptera xanthocephala var. **glauca** n. var.

There are two distinct and fairly constant varieties of this species found throughout the southern states. Dr. Ball lists them as varieties "a" and "b". The former is typical *xanthocephala* Germ. while the latter is a pale glaucus or greyish form for which I now propose the above varietal name.

Clastoptera proteus Fitch.

Dr. Fitch divides this species into four "subspecies", *flavicollis*, *cincticollis*, *maculicollis and nigricollis*, but, as pointed out by Dr. Ball, he has selected for characters mere color variations which occur in each of the three varieties of *proteus* and I do not see how we can retain the names for anything, and propose to follow Dr. Ball in dropping them in spite of the law of priority. Ball's division of this species into three subspecies or varieties as I call them (*flava*, *vittata* and *nigra*), seems to be founded on constant and natural characters but I cannot accept his names. The name *flava* seems to be a straight synonym of *saint-cyri* Prov., *vittata* is good, while *nigra* is a synonym of *pini* Fitch. The latter name is also preöccupied by *nigra* Germ. from Brazil (not *atra* as stated by Fitch.

Telamona subfalcata n. sp.

Size and aspect of *compacta* Ball but distinguishable by the acute. almost falcate, posterior angle of the crest and the dotted elytral nervures. Length 9 mm.

Head short, its base strongly sinuated; apical margin of the cheeks deeply sinuated; base of the clypeus deeply inserted in the face, its sutures distinct, regularly rounded; apex arcuated, little produced, the lateral lobes scarcely distinguished. Humeral angles more produced than in *compacta*, subacute. Crest oblong, about twice as long as high; anterior margin sloping regularly from the metopidium, without a sinus at base; superior edge straight and horizontal; posterior vertical or almost overhanging; anterior angle rounded, posterior acute, subfalcate; posterior process acute, attaining the tip of the elytra in the female, nearly so in the male; the sides with about three irregular elevated nervures, the upper subobsolete.

Color testaceous-cinerous, obscurely mottled with brown which color forms a broad band across the hind margin of the crest; dorsal carina irregularly dotted or blotched with black and there is a cluster of similar points on the humeral angles anteriorly. Lower surface of the anterior and intermediate femora and outer face of the tibiæ banded with fuscous or black; apex of the hind femora with a black spot. Elytra coriaceous and punctured at base, the main nervures pale varied with black; apical cloud clearly defined, almost black, covering about two-thirds of the apical cell.

The color of the male is more whitish with the brown band more distinct and on the metopidium is a suggestion of a large brownish annulus which becomes trilobate on the base of the crest. The usual three black points over the eyes seem to be wanting in this species and the round impression at the base of the crest posteriorly is deep and blackish.

Described from three examples: one male taken at Belleair, Fla., by Mrs. Slosson, and two females taken by Mr. J. C. Bradley at St. Simon Isd., Georgia, about May 1st, 1911.

Tettigonia vs. Tettigoniella.

Genus *Tettigonia* (Hemiptera) was founded by Geffroy in 1762 in his Hist. Abreg. des Insects, vol. I, page 429, where he spells it *Tetigonia.* Spelled with two t's it is preoccupied by the Orthopterous genus *Tettigonia* of Linneus but Kirkaldy claims that the omission of one of the t's makes it valid by the rules of the International Code. Distant, however, has pointed out (Fauna of British India, Rhyngota vol. 4, pags 201, 1908,) that this spelling was merely a typographical error as Geoffroy refers to Reaumur (Memoirs, vol. 5, page 150, 1740,) where it is spelled with two t's and made to include practically the same insects as does Geffroy's genus, and in this I believe Distant is right. This genus was recognized by Latreille who includes *Cicada viridis* Linn. which should probably be taken as its type. Jacobi was first to recognize the necessity of renaming the genus and in 1903 (Zool. Jahresb. XIX, p. 778,) proposes the name *Tettigoniella*, mentioning *viridis* of Linneus which Distant names as the type. Fabricius with his predilection for mixing up the Linnean genera calls this genus *Cicada* and the Cicadidæ of the present day he calls *Tettigonia.*

The following synonomy may make this more clear:

Tettigoniella Jacoby, 1903; Distant, 1908; Van Duzee, 1909.

Tettigonia Reaumur, 1740, (not of Linneus); Geffroy, 1762 (misspelled Tetigonia); Latreille, 1802; Stal 1869; Oshanin, 1906.

Cicada Fabricius, 1775 etc; Zetterstedt, 1828.

Tetigonia Kirkaldy, 1900.

Xestocephalus Agassizi n. sp.

Closely allied to *tessellatus* but larger and more strongly marked. Pale testaceous irrorated and varied with brown. Vertex and apex of the head dark brown; median line, an oblong apical spot, a line about each lateral compartment of the vertex which forms a large square produced toward the apex and enclosing an ocellus-like spot, an oblique line on each side below the apex, and a spot on each ocellus, whitish. Face brown; a few points on the base of the front and the arcs obscurely paler; margins of the clypeus and the antennal pits piceous. Pronotum transversely wrinkled, evenly mottled on the disk; anterior and lateral margins shading darker and marked with about five larger whitish spots; lateral edges pale. Scutellum whitish at apex; piceous-brown on the basal field where there is a broad pale ray either side of the middle which approach anteriorly. Elytra pale testaceous varied with brown which becomes piceous in places; nervures largely ivory white alternated with brown, the costal broken by a dark line before the middle, a longer one before the stigma and a shorter one behind it; apex with about five brownish spots, the inner quadrangular, the three middle sometimes coalesing; clavus more finely mottled with the base and apex of the nervures white. Pectoral pieces dark brown or blackish, margined with pale. Legs and venter pale testaceous brown; the posterior tibiæ faintly dotted with brown; tarsi annulated with brown. Last ventral segment of the female broadly obtusely emarginate. Length about 5 mm.

Described from one pair taken on April 20th 1909, at Balaclava, Jamaica, by Mr. A. E. Wright. I have named this species in honor of the late Prof. Alexander Agassiz, Director and Patron of the Museum of Comparative Zoology from which collection these specimens were kindly sent to me for study by the Curator, Mr. Samuel Henshaw. This species resembles *pulicarius* in the markings of the head and *tessellatus* in the variegated elytra. From the latter it differs by its still larger size the less arcuated hind margin of the pronotum, the brown borders of the clypeus, the more approximate pale vittæ on the scutellum and more broken maculation on the elytra.

Eupterix collina Flor.

This pretty tessellated species, marked with three conspicuous black spots on the vertex, is common in Europe but has not heretofore been recorded from this country. I have recently received an example taken by Mr. J. C. Bradley at Palo Alto, California, in September, and a good series taken at Fredonia, N. Y., November 9th 1911, by Mr. C. R. Crosby. It makes an interesting addition to our North American fauna.

ADDITIONAL CAPSIDAE.

Criocoris canadensis n. sp.

Most closely related to *tibialis* Fieb. Black: antennæ of the female fulvous with the first joint and base of the second black. Length 3 mm.

Head produced, conical; as long as its basal width when viewed vertically to its upper surface. Basal joint of the antennæ attaining the tip of the clypeus, much narrowed at base especially in the male. Second joint in the female much thinner; scarcely thickened toward the apex; as long as the pronotum; in the male strongly incrassated, wider than the basal and very slightly narrowed toward its apex; third two-thirds the length of the second; fourth shorter than the third. Whole surface covered with deciduous scale-like appressed white hairs which are easily lost; the upper surface with a few short black hairs.

Color black, somewhat polished, becoming fuscous on the elytra and almost testaceous on the apex of the head, base of the abdomen, and toward the apex of the tibiæ. Antennæ in the female; first joint black, second fulvous, black at base; third testaceous becoming dusky towards its apex; in the male black with the third and fourth fuscous, the third pale at base. Anterior and intermediate tibiæ pale for a short space near their apex; the tarsi soiled white, brownish at tip. Elytra black becoming obscure fuscous on the corium. Membrane faintly smoky with a pale arc exterior to the nervures, more pronounced at the apex of the smaller areole; the cells darker fuscous. Wings almost hyaline, iridescent, the nervures feebly distinguished.

Described from three males aud three females taken by Mr. Geo. A. Moore of Montreal at North Hatley and Como, Quebec, and Lachine, Ont., in July and August. The male of this species agrees almost exactly with Reuter's description of his *Stronglotes saliens*, male, and I would not be surprised if his Pennsylvania specimen belonged here; but the female is very distinct in its slender and strongly colored antennæ, and places the species in genus *Criocoris* without a question.

The generic name *Strongylotes* of Reuter is preöccupied as is also the name *Laodamia* substituted for it by Kirkaldy I therefore propose the name **Criocoridea** for this genus which seems to differ from *Criocoris* principally in the form and color of the female antennæ.

Lygus chagnoni Stev.

Mr. Geo. A. Moore of Montreal has very kindly secured for me the type of this species which on careful examination I find to be typical *Lygus pabulinus* Linn. Mr. Stevenson (Can. Ent., vol. 35, p. 214, 1903) compares his new species with *pabulinus* but evidently his *pabulinus* is *belfragei* of Reuter. His name *chagnoni* must therefore fall as a synonym of *pabulinus* Linn.

Phytocoris vanduzei Reuter.

Dr. Reuter thinks, and in this I believe he is right, that my *Dichrooscytus marmoratus* should be transferred to genus *Phytocoris* where it will find itself preöccupied by an European species of the same name. He therefore (Hemipterologische Miscellen, p. 30) renames it *P. vanduzei.* This species is not typical of genus *Phytocoris* but it is probably better placed there than in any other genus.

PERSONAL OBSERVATIONS
AND NOTES ON

BREEDING, MIGRANT OR VISITING BIRDS

ON THE

NIAGARA FRONTIER

MADE BY

OTTOMAR REINECKE

LIST.

A. O. U. No. — No. in List.

2. COLYMBUS HOLBOELLII. 1

AMERICAN RED-NECKED GREBE.

One caught on street during winter of 1885. Dr. Cummings and J. Savage shot one at West Seneca 1906

3. COLYMBUS AURITUS. 2

HORNED GREBE.

Common, Migrant, Niagara River. Dr. Cummings saw 5 on Strawberry Island 1909.

6. PODILYMBUS PODICEPS. 3

PIED-BILLED GREBE; DABCHICK, HELLDIVER, WATER-WITCH.

Quite common near Niagara River. Breeds. Have been taken at Point Abino, Strawberry Island and Tonawanda Swamp, and are numerous above and below Niagara Falls.

7. URINATOR IMBER. 4

LOON.

Quite Common on Niagara River in the fall. On hazy nights some are carried over the Horseshoe Fall and get kiiled. They do not breed here.

11. URINATOR LUMME. 5

RED-THROATED DIVER. LOON.

Rare. Winter visitor, Lake Erie and Niagara River. I have a specimen that was picked up on a street near the water-front.

34. ALLE ALLE. 6

DOVEKIE.

Dr. Wheeler of Delaware Ave. brought in a bird, badly mutulated by poor skinning a short time ago, which we could not identify as any bird but a Dovekie. Dr. Carlos Cummings.

35. MEGALESTRIS SKUA. 7

SKUA.

One was shot by Chas. Linden during Spring of 1886 and is in the Collection of the Buffalo Society of Natural Sciences.

A. O. U. No. | No. in List.

39. GAVIA ALBA. 8

IVORY GULL.

Mar. 12, 1910. Was shot on Niagara River, is mounted and can be seen in my collection. Exceedingly rare.

40. RISSA TRIDACTYLA. 9

KITTIWAKE.

Quite common, Migrant; Lake Erie and Niagara River.

42 LARUS GLAUCUS. 10

ICE GULL.

Rare. Winter visitor, Niagara River.

43. LARUS LEUCOPTERUS. 11

ICELAND GULL.

Occasional, Mar. 7th, 1912 at foot of Ferry street. James Savage.

45. LARUS KUMLIENI. 12

KUMLIENS GULL.

Occasional. Seen by James Savage from the Steel Arch Bridge at Niagara Falls, Mar. 23 1 and 25th, 1912.

51a. LARUS ARGENTIATUS SMITHSONIANUS. 13

AMERICAN HERRING GULL.

Common, Migrant and Winter visitor.

54 LARUS DELAWARENSIS. 14

RING-BILLED GULL.

Migrant. Abundant.

58. LARUS ATRICILLA. 15

LAUGHING GULL.

Accidental.

60. LARUS PHILADELPHIA. 16

BONAPART'S GULL.

Quite common. Migrant.

70. STERNA HIRUNDO. 17

COMMON TERN.

Common. Breeds on small islands in Lake Erie.

71. STERNA PARADISAEA. 18

ARCTIC TERN.

Accidental. Charles Linden.

A. O. U. No. | No. in List.

74. STERNA ANTILLARUM. 19

LEAST TERN.

Rare. Migrant, Niagara River.

77. HYDROCHELIDON NIGRO SURINAMENSIS. 20

BLACK TERN.

My son Edward Reinecke shot one floating down Niagara River, above the Falls, Aug. 2d, 1903. Is in my collection. It is also mounted and in the collection of the B. Soc. of Nat. Sciences. Migrant.

119. PHALACROCORAX CARBO. 21

CORMORANT; SHAG.

Rare. Migrant. Niagara River. Quite a number were taken by LeBlond below the Horseshoe Falls 1910.

125. PELECANUS ERYTHRORHYNCHUS. 22

AMERICAN WHITE PELICAN.

Accidental. Jacob Koch, former resident of Buffalo, shot a fine specimen years ago on Niagara River.

129. MERGANSER AMERICANUS. 23

AMERICAN MERGANSER.

Are quite common on Niagara River above the Falls, and I have a small young specimen in my collection which was taken from the nest in a hole of a horizontal limb of an elm tree near Sherkston, Ontario, 10 miles from Buffalo. Have been very abundant for years in the lake, near the Lackawanna Steel Works. James Savage took photographs of them.

130. MERGANSER SERRATOR. 24

RED-BREASTED MERGANSER.

Quite common on Niagara River. On hazy nights they go over the Horseshoe Falls and are easily procured. Migrant. Have been in large numbers with the American Merganser.

131. LOPHODITES CUCULLATUS. 25

HOODED MERGANSER.

Rare. Migrant. In the winter of 1909 Mr. Ethan Howard shot 5 on Niagara River.

A. O. U. No. — No. in List.

132. ANAS BOSCHAS. 26

MALLARD DUCK.

Quite common. Breeds in Tonawanda Swamp. Have taken sets.

133. ANAS OBSCURA. 27

BLACK DUCK.

Common. Breeds. Have taken sets in Tonawanda Swamp.

135. ANAS STREPERA. 28

GADWALL, GREY DUCK.

Common. Migrant.

137. ANAS AMERICANA. 29

BALDPATE, AMERICAN WIDGEON.

Occasional. Migrant.

139. ANAS CAROLINENSIS. 30

GREENWINGED TEAL.

Common. Migrant.

140. ANAS DISCORS. 31

BLUEWINGED TEAL.

Common. Migrant.

142. SPATULA CLYPEATA. 32

SHOVELLER.

Occasional. Migrant.

143. DAFILA ACUTA. 33

PINTAIL DUCK.

Migratory. Quite common on Cattaraugus Creek and Niagara River.

144. AIX SPONSA. 34

WOOD DUCK.

Is exceedingly rare. Has been known to breed here in times gone by.

146. AYTHYA AMERICANA. 35

REDHEAD.

Quite common on Niagara River above the Falls. Migrant.

147. AYTHYA VALLISNERIA. 36

CANVAS-BACK.

Occasional. Migrant.

A. O. U. No. — No. in List.

148 AYTHYA MARILA. 37

AMERICAN SCAUP DUCK.

Occasional. Migrant

149. AYTHYA AFFINIS. 38

LESSER SCAUP DUCK.

Qnite common on Niagara River. Migrant.

150. AYTHYA COLLARIS. 39

RINGNECKED DUCK.

Occasional. Migrant.

151. GLAUCIONETTA CLANGULA AMERICANA. 40

AMERICAN GOLDEN-EYE.

Common on Niagara River. Migrant.

152. GLAUCIONETTA ISLANDICA. 41

BARROW'S GOLDEN-EYE.

I have one specimen in my collection with crescent shaped spot. Migrant.

153. CHARITONETTA ALBEOLA. 42

BUFFLE-HEAD.

Common. Migrant.

154. GLANGULA HYAMALIS. 43

OLD SQUAW. LONGTAILED DUCK.

Quite common. Migrant.

155. HISTRIONICUS HISTRIONICUS. 44

HARLEQUIN DUCK.

Accidental.

160. SOMATERIA DRESSERI. 45

AMERICAN EIDER.

Rare. Wiuter visitor.

162 SOMATERIA SPECTABILIS. 46

KING EIDER.

Accidental.

163 OIDEMIA AMERICANA. 47

AMERICAN SCOTER.

Common. Migrant.

165 OIDEMIA DECLANDI. 48

WHITE-WINGED SCOTER.

Common. Migrant.

166. OIDEMIA PERSPICILLATA. 49

SURF DUCK, BLUE BILL.

Accidental. Migrant.

A. O. U. No. | No in List.

167. ERISMATURA RUBIDA. 50

RUDDY DUCK.

Common. Migrant.

169a. CHEN HYPERBOREA NIVALIS. 51

GREATER SNOW GOOSE.

Occasional. Winter visitor.

172. BRANTA CANADENSIS. 52

CANADA GOOSE.

Occasional. Winter visitor. Ottomar Schwartz, my grandson, wounded a Canada Goose on the westside of Navy Island, October 22d, 1911, and fearing that he might loose it, quickly undressed and swam out and brought it in alive. It is in my collection.

180. OLOR COLUMBIANUS. 53

WHISTLING SWAN.

Migrant. Every spring on their migration to the breeding places in the far north, they drop in the large expanse of water above the Niagara Falls, for rest and food. On hazy nights they go over the Horseshoe Falls, are maimed and injured to such an extent, that they cannot recover, and are brought in by daring boatmen. A very fine group in appropriate surroundings is mounted in the Rooms of the Buffalo Society of Natural Sciences. A few years ago 132 Swan were picked up below the Falls. In March 1912 at least 240 were taken below the Falls. Two large flocks were seen at Sherkston, Ont., and one was shot near Ridgeway, Ont., and is mounted and in possession of Mr. Kilman, the Canadian Naturalist.

181. OLOR BUCCINATOR. 54

TRUMPETER SWAN.

Accidental. Charles Linden.

187. PLEGADIS GUARAUNA 55

WHITEFACED GLOSSY IBIS.

Some years ago one was shot at the head of Grand Island and 2 years ago another, which is in possession of the Buff. Soc. of Nat. Sciences.

A. O. U. No. — No. in List.

190 BOTAURUS LENTIGINOSUS. 56

AMERICAN BITTERN.

Quite common. Breeds.

191. BOTAURUS EXILIS. 57

LEAST BITTERN.

Common. Breeds.

194. ARDEA HERODIAS 58

GREAT BLUE HERON.

Breeds. A colony in Tonawanda Swamp, 50 miles northeast of Buffalo. The Buffalo Soc. of Nat. Sciences has the finest group from nest, eggs, young in different stages and four adults, in existence at the present time, and is trying to have the State take possession of about 600 acres of swampland for a Reserve for the Heronry. This is the only remaining one of four within a radius of 50 miles of Buffalo.

201. BUTORIDES VIRESCENS. 59

GREEN HERON.

Common. Breeds. Is found near all the Creeks in the vicinity of Buffalo. A small colony in Tonawanda Swamp.

202. NYCTICORAX NYCTICORAX NAEVIUS. 60

BLACK-CROWNED NIGHT HERON.

Rare. Migrant. I have a female mounted in my collection, which was taken at Cheektowaga in the spring of 1911, and have seen a male on May 23d 1912 and a male and female June 2d near Lein's Park, Cazenovia Creek.

203. NYCTICORAX VIOLACEA. 61

YELLOW-CROWNED NIGHT HERON.

Rare. Migrant. Charles Linden and James Savage.

208. RALLUS ELEGANS. 62

KING RAIL.

Rare. Breeds. My son Albert found a nest with 10 eggs in the swamp of Point Abino, Ont., 8 miles from Buffalo; May 30th 1904.

A. O. U. No. — No in List.

212. RALLUS VIRGINIANUS. 63
VIRGINIA RAIL.
Common. Breeds.

214. Porzana CAROLINA. 64
SORA, CAROLINA RAIL.
Common. Breeds.

215. PORZANA NOVEBORACENSIS. 65
YELLOW RAIL.
Occasional. Migrant. Chas. Linden.

216. PORZANA JAMAICENSIS. 66
BLACK RAIL.
Occasional. Migrant.

219. GALLINULA GALEATA. 67
FLORIDA GALLINULE.
Common. Breeds.

221. FULICA AMERICANA. 68
AMERICAN COOT.
Common. Breeds.

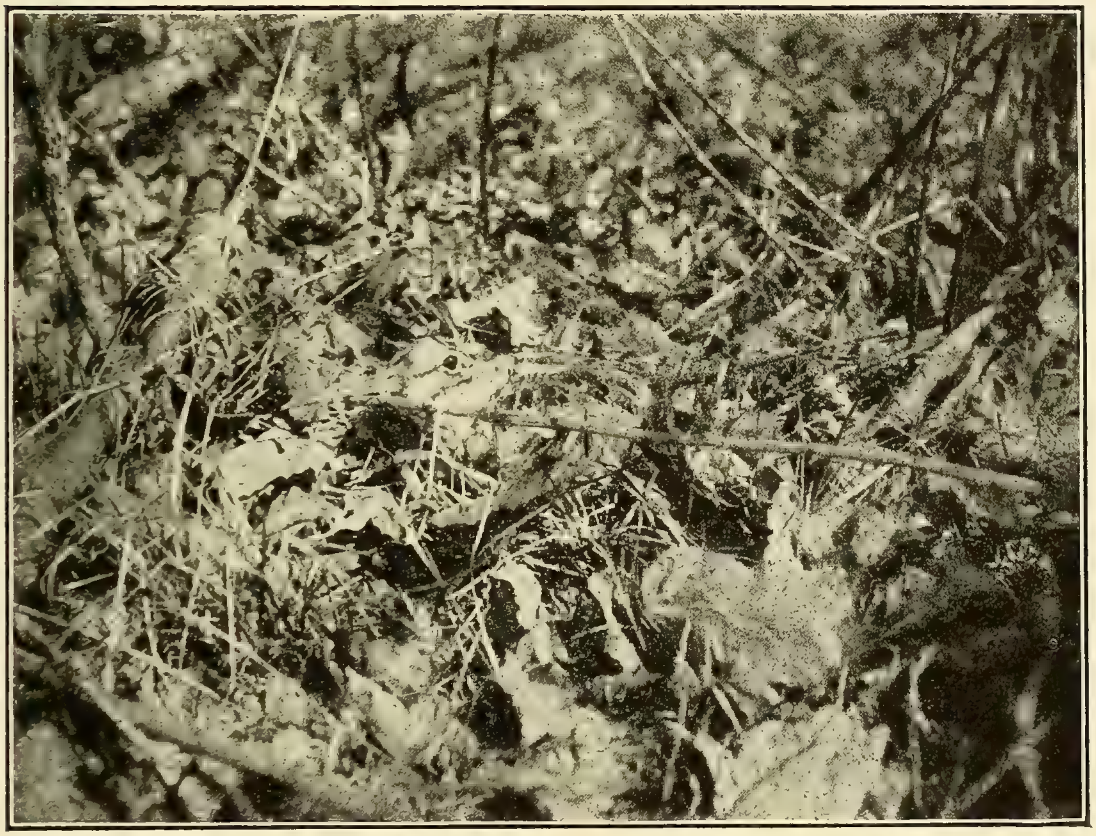
223. PHALAROPUS LOBATUS. 69
NORTHERN PHALAROPE.
Rare. Migrant.

225. RECURVIROSTRA AMERICANA. 70
AMERICAN AVOCET.
Accidental. George E. Harris.

228. PHILOHELA MINOR. 71
AMERICAN WOODCOCK.
Common. Breeds.

The woodcock occurs in the vicinity of Buffalo, as a fairly common summer resident. It arrives from the South in a normal season about March 20th, and usually within the same week begins nesting.

The nesting site is most frequently chosen among bushes and second growth in pastures or along the edge of the woods. The nest is often placed at the root of a bush or beside a log. It is a mere depression in the ground lined with a few dry leaves and grasses. The number of eggs in a nest is nearly always four; on one occasion only did we see five, and the complement is to be found the second week in April. The eggs show considerable variation in size and color. They measure from 1.47 by 1.12 to 1.65 by 1.22 inches, and are "brownish clay color, more buffy or more grayish, with numberless chocolate brown surface markings and stone gray shell spots". I found my first nest of the woodcock on high ground in what has since become Forest Lawn Cemetery, Buffalo, on April 16th, 1864, on the edge of a snowbank. The parent bird must have been killed by an owl, as its feathers were lying near the nest. The eggs are still to be seen in my collection and have well preserved their delicate color.



While snipe shooting on April 9th, 1901, my son Edward found a woodcock nest with the female bird on her eggs. Having heard of their very close setting, he crept up cautiously and with a short slender twig, moved the bird's bill up and down until finally she flew from her nest. This contained three beautiful eggs. The thought occurred to him that this was a chance to secure a picture. Three days later he again visited the place accompanied by William Wild, the artist, whose painting of ruffed grouse, exhibited at the Albright Art Gallery had attracted much attention. They found the female on the nest. Mr. Wild approached her as closely as possible and resting one knee on the ground, made a sketch of the bird. While working at this, some involuntary movement, caused by his strained position, frightened the bird from her nest. In the nest to their surprise, five eggs were displayed. I had never heard of so large a clutch of woodcock eggs in one setting and these now adorn my collection. They are finely marked and are the envy of every collector who has seen them.

During the breeding season the soaring flight of these birds is an interesting sight, and one that comparatively few observers have been privileged to witness. Loitering in their favored haunts at dusk one's attention is first attracted by a rather harsh call note, a sort of a squawk, uttered by the bird while on the ground. By going cautiously in the direction of the call, making advances only when the bird is in the air, it is possible to approach within a few feet of the spot from which it starts and to which it will return after each flight. After sweeping along the ground for about 40 yards it ascends spirally into the air until almost out of sight in the increasing darkness. It continues to soar for a short time and then suddenly drops down in a zigzag course to the spot from which it started. It then struts about and calls for a few minutes and is off again on another flight.

It requires an experienced eye to detect the breeding bird, as its plumage blends so naturally with the surroundings. How deceptively the colors of the bird harmonize with those of the ground about the nest is a never-ending wonder. See cut with bird on nest, on the following page.

Sometimes the weather is very unfavorable for them, as in the spring of 1904, when we found the woodcock in hard luck. In our neighborhood, April 13th is usually the time to look for full sets of woodcock's eggs. That year was no exception to the rule, although at the time referred to we had been visited by a heavy snowfall, which covered the ground to the depth of eight inches. The snow had been partially melted by the sun, but was frozen hard during the ensuing night. Two days later another snowstorm occurred. The next morning found us on the ground, which is an ideal locality for the nesting of this bird. The ground was then completely covered with about five inches of crusted snow. In company with several friends, we immediately began our search for the woodcock. We soon found the tracks of a pair where they had been feeding, or trying to find food, around partly frozen water holes. We flushed the birds and began looking the snow-covered ground over carefully for the nest. We found none in that vicinity, but following the back tracks of a single bird, which evidently were made the previous day, we came to the spot, at least a quarter of a mile distant, where the bird had started on its walk to the water holes. On examining the place, nothing but a slight depression was found, appearing somewhat dirtier than the otherwise clean snow.

We were beginning to think that the bird had taken this place, in a small clump of bushes, as a refuge from the snowstorms, when it was suggested that perhaps after all, the nest might be under the hard frozen snow. This was no sooner suggested than we were down on our knees, taking turns at melting the snow with our breath. After a few minutes we were rewarded by the sight of one egg, and, continuing our efforts, we found a fine set of four eggs, the first lying directly in the middle and on top of the three other eggs, and being separated from them by a layer of at least an inch of snow. From this I take it that when the first snowstorm came the bird had laid only three eggs and had found difficulty in keeping on them for any great length of time. The woodcock lives on worms from the soft marshy ground, and, consequently could not remain a long time on the eggs; or possibly the large amount of falling snow made the bird continually shift her position, until by this constant moving, the eggs were covered with snow. Then the next day the other egg was deposited as before mentioned. After this the second snowfall occurred, which the bird could not withstand, and so finally she deserted nest and eggs. We found several more nests in the same way on that day, and in each case the eggs were found as described.

In the spring of 1908 we were fortunate in securing good photographs of the woodcock, for in its breeding time this bird loses its shyness.

Having located a bird on the nest we first took a picture. No disturbance had been made in the surroundings. Then my son crept up toward the nest and cut away some twigs, dry grass and herbage. After this he crept nearer and with a slender twig moved the bill up and down, and, finally getting closer to the bird, took hold of its bill with his fingers. Then the woodcock flushed from the nest, exposing a fine set of four eggs.

After a while we went on, and to our astonishment found a pair of woodcock strutting around us, and not more than five or ten feet away. They reminded us of a turkey cock as they went along with heads erect, tails spread vertically, wings drooping and bills pointing downward close to their breasts. We used every effort to find their nest without success. What a difference in the fall of the year, when the sportsman is after them.

The woodcock was formerly found in large numbers in the vicinity of Buffalo, but of late years it has been getting scarcer each season, and with the woodduck is regarded by some ornithologists as being doomed to early extermination. It is said that the European woodcock, or woodsnipe, as it is there called, is now rarely taken by gunners of the Old World. Reasons for the diminishing number of woodcock are found in the cutting off of the woods and the draining of their feeding grounds. But the woodcock is the game bird par excellence, and the chief cause of its growing scarcity is the persistence with which it is pursued by the sportsmen.

When the birds were plentiful and the gunners few the season opened on July 4th and continued until the birds migrated southward. Then it was possible for a good shot with a muzzle-loader to bag twenty to thirty woodcock in a day. Summer shooting was very destructible, as the birds are then congregated in the relatively few wet woodlands congenial to their habits of feeding.

Now that the sale of the birds is prohibited, the shooting season restricted to the months of October and November and a bag limit fixed at six birds per gun a day; conditions hereabouts are likely to improve somewhat. But something should be done to afford protection to the birds when wintering in the Southern States, and it is to be hoped that success will soon crown the efforts now being made to secure better protection and some uniformity in the provisions of the game laws of the several states.

A. O. U. No. — No. in List.

230. GALLINAGO DELICATA. 72

WILSON'S SNIPE.

Common. Migrant. Not positive that they breed in this locality, although I have one egg from the Tonawanda Swamp.

231. MACRORHAMPHUS GRISEUS. 73

DOWITCHER.

Rare. Migrant.

234. TRINGA CANUTUS. 74

KNOT.

Rare. Migrant. James Savage obtained several specimens, one is in my collection, a pair in that of the Buffalo Society of Natural Sciences. He has also photos of same.

239. TRINGA MACULATA. 75

PECTORAL SANDPIPER.

Quite common. Migrant.

242. TRINGA MINUTILLA. 76

LEAST SANDPIPER.

Quite common. Migrant.

242a. TRINGA ALPINA PACIFICA. 77

RED-BACKED SANDPIPER.

Rare. Migrant. Chas. Linden.

A. O U. No. No. in List.

246. EREUNETES PUSILLUS. 78

SEMI-PALMATED SANDPIPER.

Occasional. Migrant.

248. CALIDRIS ARENARIA. 79

SANDERLING.

Occasional. Migrant. One was shot at Fort Erie, Ont., 1909.

254. TOTANUS MELANOLEUCUS. 80

GREATER YELLOW-SHANKS.

Common. Migrant.

255. TOTANUS FLAVIPES. 81

YELLOW-LEGS.

Migrant. Are shot here occasionally.

256. TOTANUS SOLITARIUS. 82

SOLITARY SANDPIPER.

Is with us throughout the whole season. Specimens are in our collections. Seems to breed here. I have a young one in my collection shot here in 1911.

258. SYMPHEMIA SEMIPALMATA. 83

WILLET.

Have been shot in this vicinity. Rare. Migrant.

261. BARTRAMIA LONGICAUDA. 84

UPLAND or FIELD PLOVER.

Not rare. Migrant. Breed here. Eggs and young have been found in this vicinity.

262. TRYNGITES SUBRUFICOLLIS. 85

BUFF-BREASTED SANDPIPER.

Accidental. James Savage.

263. ACTITIS MACULARIA. 86

SPOTTED SANDPIPER.

Abundant. Breeds.

264. NUMENIUS LONGIROSTRIS. 87

LONG-BILLED CURLEW.

Occasional. Migrant.

265. NUMENIUS HUDSONICUS. 88

HUDSONIAN CURLEW.

Rare. Migrant.

A. O U. No. — No. in List.

266. NUMENIUS BOREALIS. 89
ESKIMO CURLEW.

Rare. Migrant. Chas. Linden.

270. CHARADRIUS SQUATAROLA. 90
BLACK-BELLIED PLOVER.

Rare. Migrant.

272. CHARADRIUS DOMINICUS. 91
AMERICAN PLOVER.

Common. Migrant.

273. AEGIALITIS VOCIFERA. 92
KILLDEER.

Abundant. Breeds.

274. AEGIALITIS SEMIPALMATA. 93
SEMIPALMATED PLOVER.

Quite Common. Migrant.

280. AEGIALITIS WILSONIA. 94
WILSON'S PLOVER.

Rare. Migrant. Charles Linden.

283. ARENARIA INTERPRES. 95
TURNSTONE.

Rare. Migrant. Common in spring and fall. The Turnstone arrives here from the South, migrating to the far North the latter part of May, and are then in gorgeous colors, and return on the way south about the first of November, in dark grey colors, having undergone an entire change of their plumage. Both kinds are in my collection.

289. COLINUS VIRGINIANUS. 96
AMERICAN QUAIL. BOB-WHITE.

Almost extinct. Breeds.

300. BONASA UMBELLUS. 97
PARTRIDGE. RUFFED GROUSE.

Common. Resident. Breeds.

3—. PHASIANUS COLCHICUS. 98
ENGLISH PHEASANT.

Introduced. Was protected for 10 years. Quite common now. Breeds.

A. O. U. No. — No in List.

315. ECTOPISTES MIGRATORIUS. 99

PASSENGER PIGEON.

Used to be here in uncountable numbers. I have a male and female in my collection, shot a great many years ago. — Are exterminated.

316. ZENAIDURA MACROURA. 100

MOURNING DOVE.

Common. Breeds.

326. CATHARISTA ATRATA. 101

BLACK VULTURE.

One seen at West Seneca, N. Y., June 1884, by Charles Linden; another by Elmer Gillett in Tonawanda Swamp, and one on the Cattaraugus Reservation in 1911.

331. CIRCUS HUDSONICUS. 102

MARSH HAWK.

Common. Breeds.

332. ACCIPITER VELOX. 103

SHARP-SHINNED HAWK

Occasional. Breeds. Never succeeded to get a compliment of eggs.

333. ACCIPITER COOPERI. 104

COOPER'S HAWK.

Common. Breeds.

334. ACCIPITER ATRICAPILLUS. 105

AMERICAN GOSHAWK.

Rare. Winter visitor.

337. BUTEO BOREALIS. 106

RED-TAILED HAWK.

Common. Breeds. Has been very common in this vicinity in past years but at present is extremely rare.

339. BUTEO LINEATUS. 107

RED-SHOULDERED HAWK.

Common. Resident. Breeds. In this vicinity it is very common. It is the second largest Hawk and prefers low land near creeks and swamps rather than the high land, which is more frequented by the Red-tailed Hawk. It arrives here from the southern parts of the United States in the middle of March, and if possible, occupies its nesting place of former years. Our farmers go gunning for these Hawks on account of their occasionally capturing a young chicken. If they only knew that this Hawk destroys principally mice, moles, squirrel and young rabbits! I have seen one with quite a large snake in its talons fly past me. They lay from two to four eggs. But I have a fine set of five.

343. BUTEO LATISSIMUS. 108

BROAD-WINGED HAWK.

Rare. Breeds.

347a. ARCHIBUTEO LAGOPUS SANCTI-JOHANNIS. 109

AMERICAN ROUGH-LEGGED HAWK.

Rare. Migrant.

352. HALIAETUS LEUCOCEPHALUS. 110

BALD EAGLE.

Occasional. Used to breed here.

356. FALCO PEREGRINUS ANATUM. 111

DUCK HAWK.

Rare. One shot on Grand Island 1885, and one at Point Abino, Canada, now in the collection of Mr. Kilman, Ridgeway, Ont.

357. FALCO COLUMBARIUS. 112

PIGEON HAWK.

Rare. Migrant.

360. FALCO SPARVERIUS. 113

AMERICAN SPARROW HAWK.

Common. Breeds.

364. PANDION HALIAETUS CAROLINENSIS. 114

FISH HAWK.

Occasional. Migrant. Are seen near Buffalo every year.

365. STRIX PRATINCOLA. 115

AMERICAN BARN OWL.

Rare. Migrant.

366. ASIO WILSONIANUS. 116

AMERICAN LONG-EARED OWL.

Common. Breeds.

A. O. U. No. No. in List.

367. ASIO ACCIPITRINUS. 117
SHORT-EARED OWL.
Quite Common in Tonawanda Swamp. Breeds.

368. SYRNIUM VARIUM. 118
BARRED OWL.
Rare. Resident. Breeds.

372. CRYPTOGLAUX ACADICA. 119
SAW-WHET OWL. ARCADIAN OWL.
Occasional. Breeds.

373. MEGASCOPS ASIO. 120
SCREECH OWL.
Common. Resident. Breeds.

375. BUBO VIRGINIANUS. 121
GREAT HORNED OWL.
Resident. Breeds.

376. NYCTEA NYCTEA. 122
SNOWY OWL.
Migrant. Winter visitor.

387. COCCYZUS AMERICANUS. 123
YELLOW-BILLED CUCKOO.
Common. Breeds.

388. COCCYZUS ERYTHROPHTHALMUS. 124
BLACK-BILLED CUCKOO.
Quite common. Breeds.

390. CERYLE ALCYON. 125
BELTED KINGFISHER.
Common. Breeds.

393. DRYOBATES VILOSUS. 126
HAIRY WOODPECKER.
Common. Resident. Breeds.

394. DRYOBATES PUBESCENS. 127
DOWNY WOODPECKER.
Common. Resident. Breeds.

400. PICOIDES ARCTICUS. 128
ARCTIC THREE-TOED WOODPECKER.
Accidental. One specimen in my collection shot by Jerry Pierce on Cattaraugus Reservation.

A. O. U. No. | No. in List.

402. SPHYRAPICUS VARIUS. 129

YELLOW-BELLIED WOODPECKER.

Common. Migrant. Breeds.

405. CEOPHLOEUS PILEATUS. 130

PILEATED WOODPECKER.

One shot at Springville, N. Y., 1883—O. Besser. Glenwood 1885—Geo. E. Harris. We secured a stump near Hamburg, N. Y., where the Pileated Woodpeckers had made excavations for Larvae; it is now in the Buffalo Society of Natural Sciences.—Almost extinct.

406. MELANERPES ERYTHROCEPHALUS. 131

RED-HEADED WOODPECKER.

Common. Resident. Breeds.

409. MELANERPES CAROLINUS. 132

RED-BELLIED WOODPECKER.

Rare. Migrant. Breeds.

412 COLAPTES AURATUS. 133

FLICKER; HIGH HOLDER.

Abundant. Breeds.

417. ANTROSTOMUS VOCIFERUS. 134

WHIP-POOR-WILL.

Occasional. Breeds.

420. CHORDEILES VIRGINIANUS. 135

NIGHT HAWK.

Abundant. Breeds. Eggs are found on the gravel roofs of our city.

423. CHAETURA PELAGICA. 136

CHIMNEY SWIFT.

Common. Breeds.

428. TROCHILUS COLUBRIS. 137

RUBY-THROATED HUMMER.

Tolerably common. Breeds.

444. TYRANNUS TYRANNUS. 138

KINGBIRD.

Common. Breeds.

452. MIARCHUS CRINITUS. 139

GREAT CRESTED FLYCATCHER.

Tolerably common. Breeds.

A. O. U. No. — No. in List.

456. SAYORNIS PHŒBE. 140

PHŒBE.

Common. Breeds.

459. CONTOPUS BOREALIS. 141

OLIVE-SIDED FLYCATCHER.

One taken at Orchard Park, N. Y., 1885

461. CONTOPUS VIRENS. 142

WOOD PEWEE.

Common. Breeds.

463. EMPIDONAX FLAVIVENTRIS. 143

YELLOW-BELLIED FLYCATCHER.

Rare. Breeds.

465. EMPIDONAX VIVESCENS. 144

GREEN-CRESTED FLYCATCHER.

Rare. Breeds.

466a. EMPIDONAX TRAILLII. 145

TRAILLS FLYCATCHER.

Rare. Breeds.

467. EMPIDONAX MINIMUS. 146

LEAST FLYCATCHER.

Common. Breeds.

474b. OTOCORIS ALPESTRIS PRATICOLA. 147

PRAIRIE HORNED LARK.

Common. Resident. Breeds. Geo. E. Harris wrote an exhaustive article on this bird, published in Capt. Bendires splendid Book on Amer. Birds.

477. CYANOCITTA CRISTATA. 148

BLUE JAY.

Common. Resident. Breeds.

488. CORVUS AMERICANUS. 149

COMMON CROW.

Abundant. Resident. Breeds.

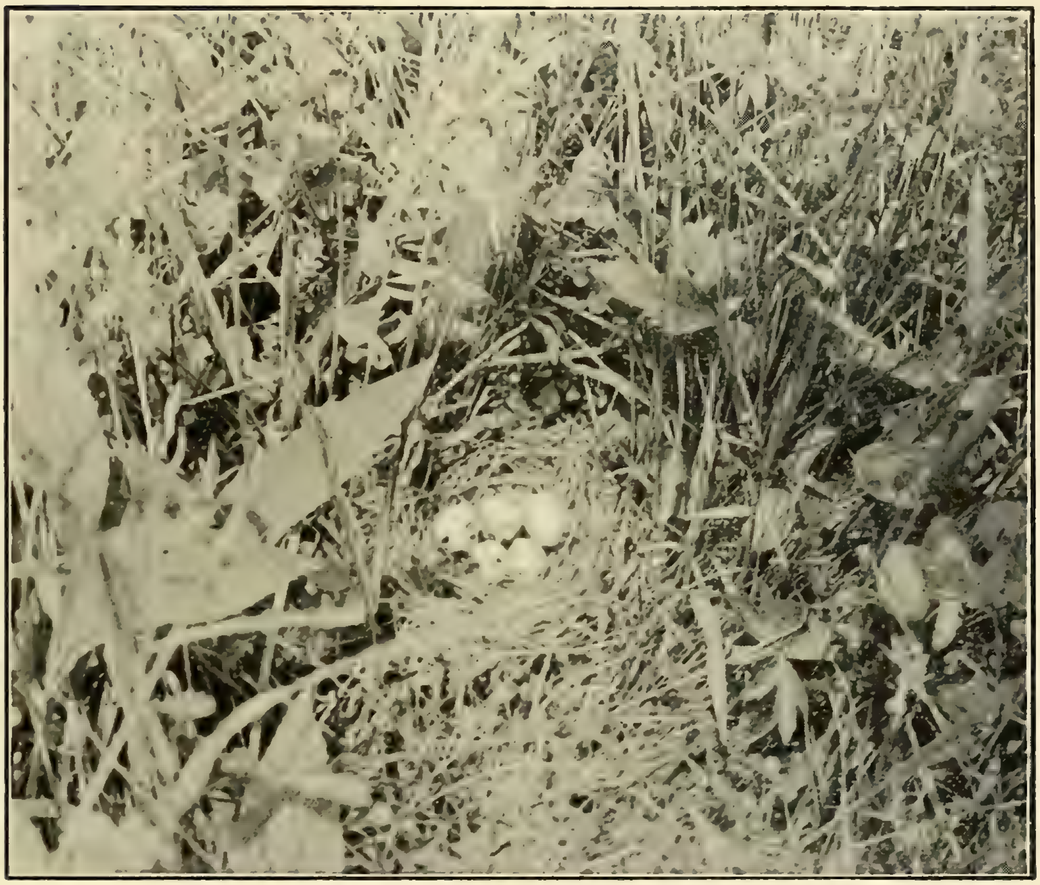
494. DOLICHONYX ORYZIVORUS. 150

BOBOLINK.

Common. Breeds. Of all our natural songsters the Bobolink is the most noted and popular. Descriptions of his songs so frequently appear in literature that even those who have not heard it must form a good idea of its enchanting music:

> "That rollicking, jubilant whistle,
> That rolls like a brooklet along —
> That sweet flageolet of the meadows,
> The bubbling, bobolink song."

In the South he is known as the Rice-bird. The nest of the Bobolink is difficult to find; it is built in a natural cavity of the ground, amongst



the tall grass of meadows; which is clearly shown in the photo. In leaving the nest the female will run off through the grass quite a distance before rising, and she will repeat this upon her return, but by getting in a position so that you can overlook a meadow, it is not difficult to locate their site. — They lay from 5 to 7 eggs, and almost every set is different in color and markings. — In this neighborhood they are very abundant. They arrive here after a long journey from the central part of South America in the middle part of May, and in early fall depart for the south. — In our southern rice-fields they are very destructive to the crop, and are killed and trapped in every conceivable way. In Washington, D. C., in pretty near all the hotels they are served to the guests as rice-birds. — The protection that they receive in the northern states prevents their extermination.

495. MOLOTHRUS ATER. 151

COWBIRD.

Breeds. Lays its eggs in the nests of other birds. My son Edward found an egg of a Cowbird in the nest of a white-bellied Nuthatch, which was in a horizontal dry branch of a Linden about 40 feet above the ground.

498. AGELAIUS PHŒNICUS. 152

RED-WINGED BLACKBIRD.

Abundant. Breeds.

497. XANTOCEPHALUS XANTOCEPHALUS. 153

YELLOW-HEADED BLACKBIRD.

Rare. Migrant.

501. STURNELLA MAGNA. 154

MEADOW LARK.

Common. Breeds. To my knowledge this bird has increased materially in the surroundings of Buffalo.

506. ICTERUS SPURIUS. 155

ORCHARD ORIOLE.

Quite common. Breeds.

507. ICTERUS GALBULA. 156

BALTIMORE ORIOLE.

Common. Breeds.

509. EUPHAGUS CAROLINUS. 157

RUSTY BLACKBIRD.

Common. Migrant.

511 QUISCALUS QUISCULA. 158

CROW BLACKBIRD.

Common. Breeds.

A. O. U. No. No. in List.

514. HESPERIPHONA VESPERTINA. 159

EVENING GROSBEAK.

B. W. Fenton secured a specimen at Brant, N. Y., in 1866 My son Ed. Reinecke in 1891 shot several near Delaware Park. I advised friends across Niagara River in Sherkston, Canada, to keep a sharp lookout, and through them got in possession of about 20 specimens which are mounted in my collection. I presented several to the Buffalo Society of Natural Sciences, and two to the Nat. Museum in Stockholm, Sweden. They arrived from the north-west shortly after Christmas. A few specimens were seen several years afterwards. Accidental. In 1911 quite a number were seen in this part of the state.

515. PINICOLA ENUCLEATOR LEUCURA. 160

PINE GROSBEAK.

Rare. Winter visitor.

517. CARPODACUS PURPUREUS. 161

PURPLE FINCH.

Used to be common. Quite rare now. Breeds.

521. LOXIA CURVIROSTRA MINOR. 162

AMERICAN CROSSBILL.

Tolerably common. Migrant.

528. ACANTHIS LINARIA. 163

REDPOLL.

Rare.

529. SPINUS TRISTIS. 164

AMERICAN GOLDFINCH.

Abundant. Resident. Breeds.

533. SPINUS PINUS. 165

PINE SISKIN. PINE FINCH.

Occasional. Winter visitor.

534. PASSERINA NIVALIS. 166

SNOW BUNTING.

Common. Winter visitor.

536. CALCARIUS LAPPONICUS. 167

LAPLAND LONGSPUR.

Rare. Winter visitor. Chas. Linden, G. E. Harris.

A. O. U. No. — No. in List.

540. POOCAETES GRAMINEUS. 168

VESPER SPARROW.

Common. Breeds.

542a. PASSERCULUS SANDWICHENSIS SAVANNA. 169

SAVANNA SPARROW.

Occasional. Breeds.

546. COTURNICULUS SAVANNARUM PASSERINUS. 170

GRASHOPPER SPARROW.

One specimen secured by James Savage.

554. ZONOTRICHIA LEUCOPHRYS. 171

WHITE CROWNED SPARROW.

Common. Migrant.

558. ZONOTRICHIA ALBICOLLIS. 172

WHITE-THROATED SPARROW.

Common. Migrant.

559. SPIZELLA MONTICOLA. 173

TREE SPARROW.

Common. Winter visitor.

560. SPIZELLA SOCIALIS. 174

CHIPPING SPARROW.

Abundant. Breeds.

563 SPIZELLA PUSILLA. 175

FIELD SPARROW.

Common. Breeds.

567. JUNCO HYEMALIS. 176

SLATE-COLORED JUNCO.

Common. Resident. Breeds.

581. MELOSPIZA CINEREA MELODIA. 177

SONG SPARROW.

Abundant. Breeds.

583. MELOSPIZA LINCOLNI. 178

LINCOLN'S SPARROW.

Rare. Migrant. Chas. Linden.

584. MELOSPIZA GEORGIANA. 189

SWAMP SPARROW.

Occasional. Breeds.

A. O. U. No. | No. in List.

585. PASSERELLA ILIACA. 180

FOX SPARROW.

Tolerably common. Migrant.

587. PIPILO ERYTHROPTHALMUS. 181

CHEWINK.

Quite common. Breeds.

593. CARDINALIS CARDINALIS. 182

CARDINAL GROSBEAK.

Accidental.

595. ZAMELODIA LUDOVICIANA. 183

ROSE-BREASTED GROSBEAK.

Abundant. Breeds.

598. CYANOSPIZA CYANEA. 184

INDIGO BIRD.

Common. Breeds.

608. PIRANGA ERYTHROMELAS. 185

SCARLET TANAGER.

Common. Breeds.

611. PROGNE SUBIS. 186

PURPLE MARTIN.

Common. Breeds.

612. PETROCHELIDON LUNIFRONS. 187

CLIFF SWALLOW. EAVE SWALLOW.

Common. Breeds.

613. HIRUNDO ERYTHROGASTER. 188

BARN SWALLOW.

Common. Breeds.

614 IRIDOPROCNE BICOLOR. 189

TREE SWALLOW.

Common. Breeds.

616. RIPARIA RIPARIA. 190

BANK SWALLOW.

Common. Breeds.

617 STELGIDOPTERYX SERRIPENNIS. 191

ROUGH-WINGED SWALLOW.

One taken at Glenwood, N. Y., 1888 by Miss T. M. Schlegel, and also later by James Savage.

618. AMPELIS GARRULUS. 192

BOHEMIAN WAXWING.

Rare. Winter visitor.

A. O. U. No. — No. in List.

619. AMPELIS CEDRORUM. 193
[CEDAR WAXWING. CEDAR BIRD.
Abundant. Resident. Breeds.

621. LANIUS BOREALIS. 194
NORTHERN SHRIKE. BUTCHER BIRD.
Occasional. Winter visitor.

622a. LANIUS LUDOVICIANUS EXCUBITORIDES 195
WHITE-RUMPED SHRIKE.
Occasional. Breeds.

624. VIREO OLIVACEUS. 196
RED-EYED VIREO.
Common. Breeds.

627. VIREO GILVUS. 197
WARBLING VIREO.
Common. Breeds.

628. VIREO FLAVIFRONS. 198
YELLOW-THROATED VIREO.
Occasional. Breeds.

629. VIREO SOLITARIUS. 199
SOLITARY VIREO.
Rare. Migrant.

631. VIREO NOVEBORACENSIS. 200
WHITE-EYED VIREO.
Rare. Breeds.

636. MNIOTILTA VARIA. 201
BLACK and WHITE WARBLER.
Common. Migrant. Breeds.

637. PROTONOTARIA CITREA. 202
PROTHONOTARY WARBLER.
Rare. Migrant.

641. HELMINTHOPHILA PINUS. 203
BLUE-WINGED WARBLER.
Rare. Migrant.

642. HELMINTHOPHILA CHRYSOPTERA. 204
GOLDEN-WINGED WARBLER.
Rare. Migrant.

645. HELMINTHOPHILA RUBRICAPILLA. 205
NASHVILLE WARBLBR.
Common. Breeds.

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648. COMPSOTHLYPIS AMERICANA. 206

PARULA WARBLER.

Occasional. Migrant.

650. DENDROICA TIGRINA. 207

CAPE MAY WARBLER.

Rare. Migrant.

652. DENDROICA AESTIVA. 208

SUMMER YELLOW BIRD.

Common. Breeds. Two and sometimes three nests, one on top of the other to prevent the raising of a young Cowbird, are often found.

654. DENDROICA CAERULESCENS. 209

BLACK-THROATED BLUE WARBLER.

Common. Migrant. Breeds.

655. DENDROICA CORONATA. 210

MYRTLE WARBLER.

Abundant. Migrant.

657. DENDROICA MACULOSA. 211

MAGNOLIA WARBLER.

Common. Migrant. Breeds.

658. DENDROICA COERULEA. 212

CERULEAN WARBLER.

Quite rare. Breeds. They built their nests on an horizontal branch at least 40 feet from the ground. Very difficult to get the nest with the eggs.

659. DENDROICA PENNSYLVANICA. 213

CHESTNUT-SIDED WARBLER.

Common. Migrant. Breeds.

660. DENDROICA CASTANEA. 214

BAY-BREASTED WARBLER.

Occasional. Migrant.

661 DENDROICA STRIATA. 215

BLACK-POLL WARBLER.

Common. Migrant.

662. DENDROICA BLACKBURNIAE. 216

BLACKBURNIAN WARBLER.

Quite common. Migrant.

666. DENDROICA CHRYSOPARIA. 217

GOLDEN-CHEEKED WARBLER.

Rare. Migrant.

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667. DENDROICA VIRENS. 218
BLACK-THROATED GREEN WARBLER.
Common. Migrant. Breeds near Cascade Park. The nest is found in the evergreens, 2 to 4 feet from the ground.

671. DENDROICA VIGORSII. 219
PINE WARBLER.
Occasional. Migrant.

672a. DENDROICA PALMARUM HYPOCHRYSEA. 220
YELLOW PALM WARBLER.
Rare. Migrant. Chas. Linden.

673. DENDROICA DISCOLOR. 217
PRAIRIE WARBLER.
Rare. Migrant.

674. SEIURUS AUROCAPILLUS. 218
OVEN BIRD. GOLDEN-CROWNED THRUSH.
Common in Tonawanda Swamp. Breeds.

675. SEIURUS NOVEBORACENSIS. 219
WATER THRUSH.
Occasional. Breeds.

679. GEOTHLYPIS PHILADELPHIA. 220
MOURNING WARBLER.

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Rare. Migrant. An exceedingly shy bird. Breeds. We have taken some in West Seneca, now occupied by the Lackawanna Steel plant. Can now be found in Tonawanda Swamp. The first week in June when the Mosquitos are thick, is the time they breed. The nests are near the ground in clusters of ferns. See Photo, p. 542. Very difficult to find, unless you know their notes, which during nesting time are few. The eggs are white with a sprinkling of reddish dots near the larger ends.

681. GEOTHLYPIS TRICHAS. 221

MARYLAND YELLOW-THROAT.

Occasional. Breeds.

683. ICTERIA VIRENS. 222

YELLOW-BREASTED CHAT.

Occurs here. Ought to breed here.

684. WILSONIA MITRATA. 223

HOODED WARBLER.

Occasional. Breeds.

686. WILSONIA CANADENSIS. 224

CANADIAN WARBLER.

Common. Migrant. Breeds.

687. SETOPHAGA RUTICILLA 225

AMERICAN REDSTART.

Common. Breeds.

704. GALEOSCOPTES CAROLINENSIS. 226

CATBIRD.

Common. Breeds.

705. TOXOSTOMA RUFUS. 226

BROWN THRASHER. BROWN THRUSH.

Quite Common. Breeds.

718. THRYOTHORUS LUDOVICIANUS. 227

CAROLINA WREN.

Breeds.

721. TROGLODYTES AEDON. 228

COMMON HOUSE WREN.

Breeds. Used to be very common but the English Sparrow drove them away.

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722. OLBIORCHILUS HIEMALIS. 229

WINTER WREN.

Occasional. Migrant. Breeds.

724. CISTOTHORUS STELLARIS. 230

SHORT-BILLED MARSH WREN.

Breeds.

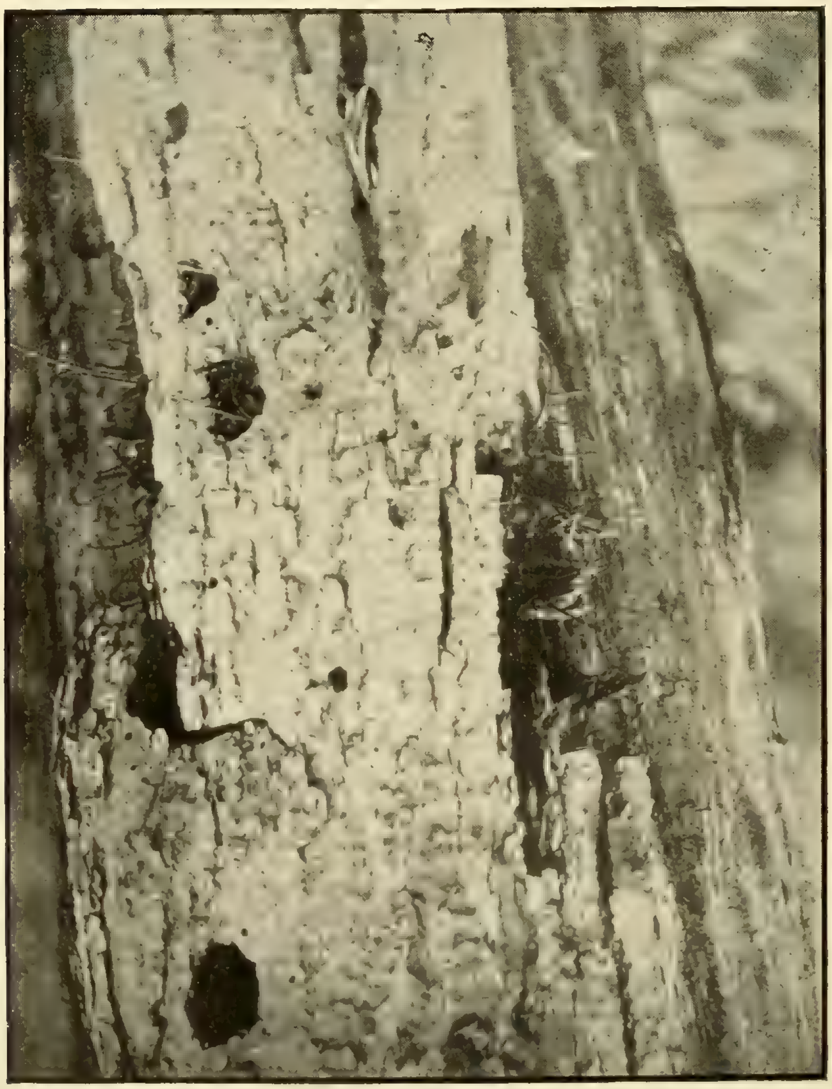
725. TEMATODYTES PALUSTRIS. 231

LONG-BILLED MARSH WREN.

Abundant in swamps. Breeds.

726 CERTHIA FAMILIARIS AMERICANA. 232

BROWN CREEPER.



Abundant. Breeds. The Brown Creeper is with us during the whole year, doing an

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immense amount of good by living entirely on the eggs of various destructive beetles. As the photo shows, their nest is built behind loose bark of tree trunks. I only found them near the Heronry in Tonawanda Swamp. Within the loose scale of bark a mass of twigs and other rubbish is crammed, upon which a layer of finer bark with an intermixture of a little moss and a number of spiders cocoons are placed. The eggs number from five to eight and can be found from May 31st, and are creamy-white, speckled or spotted with hazel or reddish brown, often in form of wreaths.

727. SITTA CAROLINENSIS. 233

WHITE-BREASTED NUTHATCH.

Abundant. Resident. Breeds.

728. SITTA CANADENSIS. 234

RED-BREASTED NUTHATCH.

Occasional. Migrant. Breeds.

731. BÆOLOPHUS BICOLOR. 235

TUFTED TITMOUSE.

Rare. Straggler. Chas. Linden.

735. PARUS ATRICAPILLUS. 236

CHICADEE.

Abundant. Resident. Breeds.

748. REGULUS SATRAPA. 237

GOLDEN-CROWNED KINGLET.

Abundant. Migrant.

749. REGULUS CALENDULA. 238

RUBY-CROWNED KINGLET.

Common. Migrant.

755. HYLOCICHLA MUSTELINUS. 239

WOOD THRUSH.

Common. Breeds.

756. HYLOCICHLA FUSCESCENS. 240

WILSON'S THRUSH.

Common. Breeds.

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758a. HYLOCICHLA USTULATA SWAINSONII. 241

OLIVE-BACKED THRUSH.

Occasional. Migrant.

759b. HYLOCICHLA GUTTATA PALLASII. 242

HERMIT THRUSH.

Tolerably common. Breeds.

761. MERULA MIGRATORIA. 243

AMERICAN ROBIN.

Common. Breeds.

766. SIALIA SIALIS. 244

BLUEBIRD.

Abundant. Breeds. The English Sparrow has driven them from the city where in former years they were very abundant.

Addenda.

The writer must here acknowledge an indebtedness to Mr. James Savage, his sons, Edward, Ottomar and Eugene Reinecke, and Elmer Gillett.

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